

Lighting FOR PRODUCT PHOTOGRAPHY



■ Step-by-Step Guide
to Sculpting with
Light®

ALLISON EARNEST

Amherst Media®
PUBLISHER OF PHOTOGRAPHY BOOKS

Dedication

This book is dedicated to all the photographers who take time to learn lighting through reading or attending workshops that empower them to create photographs of high quality. And to my children, Stephanie and Tyler, who have given so much love, patience, and support throughout my photographic journeys. A special tribute to my long-time friend Lynn Russell, who was instrumental in the start of this book. I wish you could have seen the fruits of our labor, my dear friend. Rest in peace.

Copyright © 2013 by Allison Earnest.

All rights reserved.

All photographs by the author unless otherwise noted.

Sculpting with Light® is a registered trademark of Allison Earnest.

Published by:

Amherst Media, Inc.

P.O. Box 586

Buffalo, N.Y. 14226

Fax: 716-874-4508

www.AmherstMedia.com

Publisher: Craig Alesse

Senior Editor/Production Manager: Michelle Perkins

Assistant Editor: Barbara A. Lynch-Johnt

Editorial Assistance from: Sally Jarzab, John S. Loder, Carey A. Miller

Business Manager: Adam Richards

Marketing, Sales, and Promotion Manager: Kate Neaverth

Warehouse and Fulfillment Manager: Roger Singo

ISBN-13: 978-1-60895-544-2

Library of Congress Control Number: 2012936516

Printed in The United States of America.

10 9 8 7 6 5 4 3 2 1

No part of this publication may be reproduced, stored, or transmitted in any form or by any means, electronic, mechanical, photocopied, recorded or otherwise, without prior written consent from the publisher.

Notice of Disclaimer: The information contained in this book is based on the author's experience and opinions. The author and publisher will not be held liable for the use or misuse of the information in this book.

Check out Amherst
Media's blogs at:

<http://portrait-photographer.blogspot.com/>

<http://weddingphotographer-amherstmedia.blogspot.com/>

Table of Contents

Acknowledgments

About the Author



Introduction

What to Expect

Images Are Critical in Buying Decisions

The Role of the Photographer

Image Capture and Terminology

1. People vs. Products

People

Products

People with Products

2. Art vs. Commercial



3. Light and Lighting

Light

Lighting

Qualities of Light

FEATURE: Exposure vs. Lighting

Color Temperature

FEATURE: White Balance vs. Gray Balance

Hard or Soft

Intensity

Metering the Light

Reflected-Light Metering

Incident-Light Metering



4. Lighting Tools

Studio Strobes

- Modeling Lights
 - Types of Studio Lights
- Continuous Lights
- Light Modifiers
 - Soft Light
 - Hard Light
 - Bouncing the Light
 - Blocking the Light
 - Cutting the Light
- Grip and Support Equipment

5. Principles of Lighting Products

- Basic Light Functions
 - Main Light
 - Fill Light
 - Background Light
 - Accent Light
- FEATURE: The Size of the Light
- Types of Light Sources
 - Soft Sources
 - Hard Sources
 - Reflected Sources
- The Angle of the Light
 - 0 Degrees
 - 45 Degrees
 - 90 Degrees
 - Backlight
- FEATURE: Determine the Composition, Add the Light
 - Top Light
 - Determining the Correct Angle
- The Subject Is the Active Player
- Reflecting on the Surface Qualities of Your Subject
 - Diffused Reflection
 - Direct (or Specular) Reflection
 - Polarized Reflection
 - No Reflection
- Separating the Subject



FEATURE: Watch for Tangents

The Basic Setup

Capture and Exposure

6. Techniques for Single Products

Case Study 1: Paper Products

How It Was Done

Case Study 2: Embossed Foil Paper

How It Was Done

Case Study 3: Exposing for a Digital Screen

How It Was Done

Case Study 4: Martini Glass (Black-Line Effect)

How It Was Done

Case Study 5: Martini Glass (Black-Line Effect with Prop)

How It Was Done



Case Study 6: Martini Glass (White-Line Effect)

How It Was Done

Case Study 7: Lit Candle with Embossed Metal Lid

How It Was Done

Case Study 8: Engraving on Shiny Metal

How It Was Done

Case Study 9: Black on Black

How It Was Done

Case Study 10: White on White

How It Was Done

Case Study 11: Shoes on a White Background

How It Was Done

Case Study 12: Decorative Mirror

How It Was Done



Case Study 13: Shooting with a Light Tent

Case Study 14: Vodka Bottle with Hot Shoe Flash

Case Study 15: Lipstick with Hot Shoe Flash



7. Putting It All Together

Case Study 16: Lighting Multiple Products

The Problem

The Solution

Case Study 17: Multiple Products on Black

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Case Study 18: Simulated Sunlight with One Light

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Case Study 19: Gold Leaf Wine Bottle Label

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Case Study 20: Computer Station

The Problem

The Solution



Case Study 21: Engraved Labels

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Case Study 22: Mixed Textures

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Case Study 23: Rolleiflex TLR

The Problem

The Solution

FEATURE: A Time for Postproduction

Case Study 24: A Final Challenge

The Problem

The Solution

FEATURE: Sculpting with Light® Sequence

Conclusion

Resources

Index



Acknowledgments

It is Thanksgiving Day, and I am feeling grateful for all the opportunities that have been possible throughout my photographic career. I am thankful for my children, my family, and my friends; without their unconditional and gracious support, this book would not have been possible. There are many people to thank; if I forget to mention you personally, know that you are in my heart.

I'd like to thank my mentors, Don Jones and Scott R. Stevens. Without your countless hours of advice, laughter, and encouragement, aspiring photographers would not be reading this book.

Thanks to my dad, who taught me to maintain a strong character and follow through, and to my mom, who taught me to follow my dreams.

Special thanks to my long-time friends who appear below in no particular order of importance. All of you are equally important in my life, and I thank you for your friendship, love, and support: Connie and Carl Nink; Clay Earnest; Eileen and Mark Detka; Dan and Diane Hagmaier (for the beautiful graphics on all the set scenes); Dave Black; Lynn Russell; Joe Adams; Ty Nav; Jolene Davis; Mary Abeita; Leslie Abeyta; Doug, Kathy and Zach Kopacz; Michael Johnson; Steve Schwen; Alena Watters; Heather Cooksie; Dave Howard; Jim Stabler; Craig and Anna Hunt, Jeff Cable; Bob Ray; Ila Reinstein; Steve Hixon; Beverly Stutz; Will Jones; Jerry Ward; Mark Kemper; Elizabeth Mitkish (EAM Creative, Inc); Matt at Vodka 14; Hitomi and Sandy from Dita; Gabriel Grier; Alice Miller; David Mecey; Mike Corrado; Yvonne Merkle; Jim VanNamee; Marion Crocker; John Weidler and Emma (The Portrait Lab); Peter Geller and Uli (Sunbounce); Mark

Mather, Larry Carney, and Christian Lutz (Hensel Germany and USA), whose generosity, kindness, and support is unsurpassed.

Thank you to all the companies who graciously supported me throughout the book: Backdrop Outlet, Westcott, Manfrotto, MAC Group, Advantage Gripware, Chimera, Phase One, Sekonic, LumiQuest, ExpoImaging, and Lexar.

A special group of people deserve recognition. Thank you to the photography department and art directors from Current, Lillian Vernon, and Paper Direct, who taught me so much about lighting products, art direction, and styling products. Your generosity and giving nature is why this book is on the shelves. Big thanks to Reg, Krissy, Johnny, Marsha, James, Sue, Alicia, and Casey Chinn for welcoming me into your family and teaching me the wonderful world of catalog photography. The time I spent at Current, Inc. was an invaluable education—fun, challenging, and wonderful!

I would also like to thank my two models who appear in the book: Amanda Enloe and Jeremy R. Vasquez. Thank you for your patience and willingness to work around my crazy schedule and shoot at a moment's notice. Thank you for your friendship and kindness.

A special thanks to Thom Harrop, with whom I worked many years ago at NASA. Thank you for accepting the job of editor and technical editor of this book. Your input, expert advice, support, and friendship have been invaluable.

Last but not least, thank you to Amherst Media® for giving me great opportunities to help educate aspiring photographers.

About the Author

Allison started her career twenty-six years ago working as a photographer for NASA, where she documented space shuttle landings and experimental aircraft for NASA/Dryden Flight Research Center at Edwards Air Force Base in California. She also worked as a medical/advertising photographer at Centinela Hospital, the former hospital of the Lakers, Kings, and Dodgers.



Photograph by Bob Ray.

Many of Allison's photographs have appeared in magazines and journals. Two of her fashion/people images were nominated, two years in a row, at the Black & White Spider awards. Currently, she is a Pro Contributor for Lexar Media and writes articles for *PPA Magazine*.

Allison holds a BS in Business Management from the University of Maryland. She is essentially a self-taught photographer and credits her success to countless mentors who have, throughout the years, graciously shared their knowledge and talent. Ms. Earnest believes in continuing education and is currently teaching her Sculpting with Light® lighting techniques at art schools, universities, and lighting workshops to aspiring photographers throughout the United States.

In the last seven years, Allison has written numerous educational articles for *Studio Photography* magazine. One such article, “Sculpting People with Light,” was particularly well received; based on it, Amherst Media® asked her to write her first book, *Sculpting with Light®: Techniques for Portrait Photographers*. Her second book, also from Amherst Media®, called *The Digital Photographer’s Guide to Light Modifiers: Techniques for Sculpting with Light®* was released nationwide October 2010.

For more on Allison, see www.allisonearnestphotography.com.

Introduction

If you are familiar with my two previous books from Amherst Media (*Sculpting with Light®: Techniques for Portrait Photographers* and *The Digital Photographer's Guide to Light Modifiers: Techniques for Sculpting with Light®*), you have become quite familiar with techniques to create beautifully lit portraits of your human subjects. What's next? Perhaps you were asked to photograph a product, or a person with a product, for a local business or advertising agency. Not wanting to move into uncharted territory, you turned down the job—only to see your competitor's mediocre photo in the local newspaper or magazine. Did you think, “I could have done better than that snapshot”?

This is a reality in today's photography market. More than ever, there are hundreds of people in every market trying to get work as professional photographers. As a result, it's increasingly common to see advertisements with poorly lit product photographs, images that lack depth, shape, or form. This does a couple of bad things. First, it hinders the sale of the product or service the photograph is attempting to promote. Second, it diminishes the photographer's ability to be successful.

There are hundreds of people in every market trying to get work as professional photographers.

Your desire to diversify is quite common as you hone your lighting skills. The challenge of creating an image that will appear in some sort of printed form is quite exhilarating. Designing a commercial/product photograph is entirely different from creating a personal portrait that will hang on a family's wall or capturing a wedding day. The purpose of creating

photographs of people is simply not the same as creating photographs of inanimate objects.

The success of a commercial photograph lies in both your lighting skill and your ability to be a great team player.

You may think that photographing objects would be conducive to using creative lighting, but that's not the case. Because of the nearly infinite range of shapes, sizes, surfaces, and textures of objects, the range of lighting techniques used is actually quite narrow—unless you are shooting an object for the sake of creating art. (We'll briefly cover this topic later in the book.)

In most cases, when you are creating photographs for commercial purposes (ads, catalogs, brochures, and even business cards) a specific lighting style is required. Additionally, you may find yourself working as part of a team, along with the client, product developer, art director, designer, and/or graphic artist, just to name a few. Therefore, the success of a commercial photograph lies in both your lighting skill and your ability to be a great team player—someone who is essential to the success and marketability of the product.

What to Expect

When photographing products, many of the basic principles you may have learned about lighting for portraiture still apply. However, as you read this book you will learn the principles of lighting a variety of “things” that each have their own set of special characteristics and require different lighting techniques. We'll begin by looking at the basic principles of lighting single objects, with surfaces ranging from shiny to dull. Moving forward, we will explore techniques for combining many products into an “environmental” illustration. Here, you will see how each subject must be lit individually within the scene without affecting the lighting on the other objects. It can be a bit tricky, but you will see detailed setup shots of each image that will help you understand the function of each lighting tool on the set.

The case studies that make up the last half of this book are not intended to be “recipes,” though you certainly could replicate them to some degree when shooting the same product in the same situation. My intent is to introduce you to how light behaves in relation to a variety of surfaces—such as glass, metal, paper, and white/black objects, just to name a few. Through these case studies, you will become familiar with the techniques and tools used to show the depth, shape, and texture of the objects you are photographing.

Images Are Critical in Buying Decisions

In the Internet age, shoppers often don’t have the advantage of tactile sensation—the ability to touch and feel an item in order to make a logical decision regarding the product. Since they cannot touch the product, buyers must use their visual acuity to make an informed decision about whether or not to purchase the product. The same is true on menus; we often have to decide whether or not to order that fancy drink or dessert based on a photograph of it. Subconsciously, you have probably chosen a dinner entrée based on a beautifully lit photo on the menu. I know I do it all the time. (Now, whether the meal tastes as good as the photograph looked—that’s another story!)

That makes it critical for your images to contain all the information about color, depth, shape, and texture that the potential buyer will need to evaluate the product using their eyes alone. Visual cues must show *everything* about the product. Is it smooth or rough? Flat or round? Thin or thick? This is where your lighting skills become critical to the success of the “things” you are photographing.

Look at **plates I-1** and **I-2**, images of a simple black frame corner. One is lit poorly and the other is lit well. Which product would you buy? Or which photo would you use in your advertisement? Can you see the difference? Of course you can.

Visual cues must show everything about the product. Is it smooth or rough? Flat or round? Thin or thick?

The Role of the Photographer

Contrary to what some people may believe, a photographer is more than a picture-taker. A photographer is an artist and a problem-solver who starts with a raw subject and sculpts it with light. Every subject requires well-placed lighting to enhance its appearance. While many other components make up a great image, without light there can be no photograph.

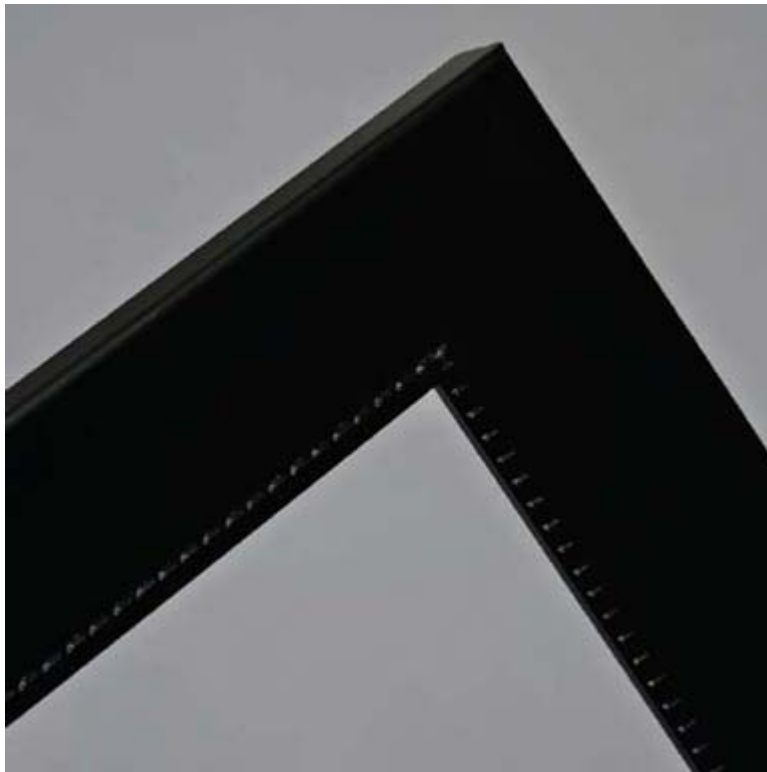


PLATE I-1. This simple black frame corner was poorly lit using a single light source that was improperly placed. If you saw this image in a frame catalog, would you know what it is or be able to identify its attributes? Probably not. (ISO 200; 78mm lens; f/11; 1/60 second)



PLATE I-2. Here's a properly lit photograph of the same black frame corner. It was still created with a single light, but correct placement and the addition of a few reflectors sculpted the light on the frame to show all the characteristics of this particular object. (ISO 200; 78mm lens; f/16; 1/60 second)

As a photographer of products, you play an important role in assisting other team members (such as an art director, graphic designer, and stylist) in producing images a potential buyer believes are an accurate depiction of the product's attributes. You become a team player, using your knowledge of lighting to problem-solve and work to the design desired by the client. Your responsibility is to communicate through lighting all the attributes of the product (color, size, shape, texture, etc.).

You become a team player, using your knowledge of lighting to problem-solve and create the design desired by the client.

Image Capture and Terminology

Since this book is about lighting a wide variety of things, in many cases I have opted to use the term “subject” instead of “product” or “object” when

referring to the main object(s) I photographed within the scene. As you read the case studies, it must be noted that the directions I've given pertaining to the position of the lights are relative to the camera position. For example, a light described as "to the left" is placed to the left of the subject as viewed from the camera position.





PLATES I-3 and I-4 (left and facing page). Images illustrating the techniques you will learn in the following chapters.



PLATE I-5. Check out case study 18 ([page 124](#)) to learn how this image was created.

All of the images in this book were captured digitally with a Nikon D700 camera and Nikkor lenses placed on a Manfrotto tripod, using Capture One Pro Software (version 6). They were shot on manual mode, in RAW format, and are presented as they were captured, with only standard dust spotting and color/contrast adjustments made in postproduction via Lightroom®.

Minor changes in lighting can create important differences in how shape and texture are recorded.

Therefore, all of the differences you see between comparison images come from changes in the lighting techniques—not from manipulations in Photoshop. Study the photos carefully; many of the changes are subtle, but very minor changes in lighting instruments or accessories can create important differences in how shape and texture are recorded in the final image. Our goal is to make a usable image at the time of capture—a shot that is as close to perfection as possible.

1. People vs. Products

You may be thinking, “I know how to light and photograph a portrait. How difficult is it to light photos of products or things?” Think about this, though: It is common for us to “alter” a portrait, using makeup to eliminate shine or retouching software to remove blemishes and soften wrinkles. In product photography, on the other hand, we don’t alter the products or photographs (except for food photography). Would you place dulling spray on a shiny metal antique plate? Of course not. Doing so would drastically misrepresent the product being photographed—not to mention permanently ruin the plate. We are trying to show the product *as it is*.

When photographing inanimate objects, your primary concern is to show the item as it is.

People

When creating a portrait for a client, your primary concern is capturing the personality of your subject and creating an idealized representation of their appearance. Since skin has little reflectance, shadows can easily be placed and filled to create a beautiful three-dimensional look. This makes the lighting, rather than the subject, the active player in the portrait session. And if you’re a little off the mark, it’s quite easy to fix flaws, like undesirable shine or dense shadows, in postproduction. With products, it is extremely difficult to “fix” bad lighting. Therefore, the initial capture of products is infinitely more critical than it is when photographing people.

Products

When photographing inanimate objects, your primary concern is to show the item as it is. The viewer needs to look at the product in an advertisement and immediately know if the glass is round or square, opaque or transparent, shiny or matte. When photographing products, the product itself becomes the active player in the session, meaning that the lighting techniques you use will be determined by the characteristics of the product itself. Not only must we light the product, we must also light the background, the surface the product rests on, and any additional props that may be in the final image.

When photographing products, the product itself becomes the active player in the session.

People with Products

Though we won't go into depth on photographing people with products (that is another book in and of itself), I have included two images created for fitness instructor Amanda Enloe. These show the two different approaches. **Plate 1-1** is a beautiful portrait of Amanda that was lit to accentuate her facial features. Notice that the weight in the lower right corner is not lit in a way that emphasizes its attributes. It is not the dominant subject of this image. As you compare this image with **plate 1-2**, you can see the weights were lit to reveal all the features of the product, making them the dominant subject in this commercial photo. Can you see the difference? Perhaps the only change I would make to this product photo would be to have the model looking down at the weights instead of making eye contact with the camera.



PLATE 1-1. Here, Amanda is the focus of the portrait and the product is used as a prop. (ISO 200; 70mm lens; f/14; 1/125 second)



PLATE 1-2. In this image, the weight is the focus of the portrait. Amanda is essentially used as a prop for the product. (ISO 200; 52mm lens; f/14; 1/125 second)

2. Art vs. Commercial

Though this book is centered on photographing products that will be used for some type of advertising purpose, it is important to clarify the distinction between photographing objects for art and photographing objects for commercial purposes.

The primary difference between photographing products for art and for commercial purposes is in the lighting. When we photograph a still life to hang on a wall, we are lighting to show our own emotional interpretation of the subject. When we photograph a product to be used for commercial purposes, it must be lit to objectively convey all the attributes of the subject so the viewer can make an informed decision about the product and its features.

It is important to clarify the distinction between photographing objects for art and photographing objects for commercial purposes.



PLATE 2-1. The warm colors and deep shadows create a romantic, mysterious feeling in this beautiful art image created by Scott R. Stevens. (ISO 200; 78mm lens; f/8; 1/6 second)



PLATE 2-2. The warming gel was removed from the light illuminating the flute, allowing the viewer to see that the flute is silver, not gold. The angle was also changed to showcase the flute and the case,

along with the manufacturer's logo. (ISO 200; 32mm; f/9; 1/60 second)

To illustrate the differences between photographing products for art and products for commercial purposes, let's look at the two images of a flute (**plates 2-1** and **2-2**) on the previous page.

If we study the two images, there are major differences. **Plate 2-1** would not work for a commercial application. First, the use of warming gels over the light source would give the viewer the impression the flute is gold-plated, which it is not. Additionally, the strong lines cast by the glasses are beautiful, but they draw our eyes to the glasses and not to the flute itself. From an artistic viewpoint, this image has emotional appeal and would look stunning hanging on a wall as art.

The photograph was lit to show all the attributes of the flute, the product being photographed.

In **plate 2-2**, the warm light was still used, but not directly on the flute itself; this retained the accurate color of the silver flute. The angle of the camera was also changed to allow the product to be seen in its entirety, case and all. Additionally, light was added overhead, creating highlights that show the beautiful shape of the flute. Finally, the intensity of the light creating the cool shadows of the glasses was reduced so that they are no longer competing as the focal point. The photograph was lit to show all the attributes of the flute, the product being photographed. Still, it retains solid artistic appeal to the client and the viewer.

3. Light and Lighting

I have found that many photographers use “light” and “lighting” as if they mean the same thing. To clarify this misconception, I have offered my rendition of how the two differ in the field of photography.

Lighting directly affects whether or not an image appears three-dimensional and true to life.

Light

Light is a form of electromagnetic radiation that stimulates the human eye. As such, it is the single most important piece of equipment a photographer/artist must possess. A firm understanding of light’s qualities and behavior is essential to controlling it and creating consistently pleasing images.

Lighting

Lighting is a technique—a way of using light to reveal shape, form, and texture, and to tell the desired story about the product and its features. Lighting directly affects whether or not an image appears three-dimensional and true to life.

Here’s a good analogy: If a chef prepared a delicious meal, you wouldn’t ask him what type of stove he used to prepare the meal, now would you? You would admire the skill with which he prepared and seasoned the meal. It’s the same with lighting; success results from the creative way in which you use the tools of your trade.

Qualities of Light

Before we look at the tools used to create light and the techniques used to control it, we must understand the qualities of light. Being able to objectively describe the light you are using will greatly enhance your ability to control and manipulate it in your photographs. Let's take a look at the three qualities of light: the color, whether it is hard or soft, and the intensity of the light. These are all measurable qualities and can be actively controlled in your images.

Exposure vs. Lighting

Since the arrival of digital technology and advanced metering systems, it is quite common to see well-exposed photographs with bad lighting. Remember: good exposure does not equal good lighting.

For example, look at [plates 3-1](#) and [3-2](#). Both of these images were exposed properly according to the light used and the light meter readings. However, it is readily apparent that the image on the right is lit better than the image on the left. Can you see the difference?



PLATE 3-1. The exposure is correct, but the lighting is poor. (ISO 200; 44mm lens; f/16; 1/100 second)



PLATE 3-2. The exposure here is the same, but the lighting is greatly improved. (ISO 200; 44mm lens; f/16; 1/100 second)

Plate 3-1 was lit with one softbox, which produced an unsightly reflection of the light source and a flatly lit photograph. It is well-exposed, but it shows no depth or dimension. Using the principles you will learn throughout this book, **plate 3-2** was created using two lights. A parabolic reflector was positioned above and behind the glass, creating depth and separation on the bottles. A second light was used behind a large, white translucent scrim to camera right and slightly behind the products. This created the pleasing reflections on the bottles, showing their shape.

We must also factor in the color of the light emitted by our light sources.

Color Temperature. The light we use to illuminate our subjects contains red, green, and blue wavelengths. However, they are rarely in the perfectly equal balance that produces pure white light. Therefore, when considering the color we wish to capture in our images, we must also factor in the color of the light emitted by our light sources. Light's color is described in terms of "color temperature," measured in degrees Kelvin (K). This scale provides a consistent way of describing the degree of "whiteness" of a particular light source.

On the Kelvin scale, daylight usually measures 5500K. This is the same color that most studio strobe units are rated. Most continuous lighting units emit light that is around 3200K, making it warmer (more red/yellow) in color. Light from a clear blue sky yields light in the 7500K range, meaning it's more blue than the light from a strobe unit.

LIGHT SOURCE.....	COLOR TEMPERATURE	
Burning candle.....	1900K	↑ WARMER
Halogen bulbs.....	3200K	
Modeling lights (tungsten).....	3400K	
Sunrise.....	4000K	
Fluorescent (cool white).....	4500K	↑ NEUTRAL
Daylight.....	5500K	
On Camera Flash.....	5500K	
Studio lights.....	5500K	
Sunlight.....	4800-5800K	↓ COOLER
Computer monitor.....	5500-6500K	
Fluorescent (daylight).....	6500K	
Clear blue sky.....	6200-7800K	
Open shade.....	8000K	

PLATE 3-3. The color temperatures of common light sources.

Understanding the color temperatures of the light sources you will commonly encounter goes a long way toward understanding how to control and manipulate the light in your final images. It will also determine how you should adjust your camera's white-balance setting. For example, if you know a light source is tungsten, you can immediately adjust your camera's white balance to tungsten. With digital capture, I find the automatic white-balance setting, coupled with a gray card, is adequate for capturing most scenes with an accurate, neutral color balance.



PLATE 3-4. The Sekonic C-500 meter measures the color temperature of your light source. Photograph courtesy of Sekonic.



PLATE 3-5. A color-balance lens (CBL) is a great tool for measuring your white balance, especially in mixed-lighting situations.

For more precise results, the color temperature of the light can be measured with a color meter, such as the Sekonic C-500 ([plate 3-4](#)). Another option is to use a CBL (color-balance lens), as seen in [plate 3-5](#). Held in front of the light source during white balance evaluation, the CBL uses neutral points and prism technology to produce extremely accurate white balance readings. This works especially well when you are working in mixed-lighting conditions, such as when combining tungsten and strobe in one photograph.

White Balance vs. Gray Balance

I would highly recommend incorporating a gray card into every set you shoot. You may have been taught to use a white card to balance your scenes—and the terminology used in our cameras (“white balance”) is a bit deceiving. The white balance should probably be called gray balance, since this is what your camera’s software is actually doing. If any or all RGB channels record at 255, there will be a color crossover and the white balance will be inaccurate. Therefore, I would recommend balancing your scene to either of the gray patches shown with arrows in [plate 3-6](#).



PLATE 3-6. A typical Macbeth Color-Checker® chart will give you accurate colors to help balance your product photographs.



PLATE 3-7. This antique food press was photographed with tungsten (3200K) light, and the camera's white balance was set at 3200k to match, balancing the light so there's no color cast. (ISO 200; 58mm lens; f/8; 1/5 second)



PLATE 3-8. This was lit exactly like [plate 3-7](#), but the white balance was set to 5500k (daylight), resulting in a strong yellow color cast. (*Note:* There is no shooting situation in which I would recommend using this method. This is purely for illustration.) (ISO 200; 58mm lens; f/8; 1/5 second)

Let's look at an example. **Plates 3-7 and 3-8** were both lit with tungsten light. [Plate 3-7](#) shows how the human eye would see the scene—because our brains automatically adjust to an array of light sources and balance them to a neutral white. [Plate 3-8](#) shows how the camera would record the same scene if we did not correct the white balance to match the color temperature of the tungsten lighting. Can you see why this issue is quite important?

Instead of adjusting your camera's white balance setting, you might also choose to neutralize the color temperature of your light source (balancing it to daylight or to match other light sources in your setup) by placing a color-compensating filter over it. Choosing the right filter for this approach requires understanding the relationships between primary colors. The visible spectrum's continuum of colors is often arranged in a circle called a color wheel (see [plate 3-9](#)). Referring to this wheel makes it easy to evaluate complementary colors, which are located directly across the wheel from each other. This tells us that if, for example, we wanted to neutralize a yellow light, we could add a filter in the complementary color: blue. If

our light was too green, adding a magenta filter would balance it to a more neutral color. (*Note: Becoming familiar with complementary colors will also be very useful when designing sets and selecting props; elements in complementary colors tend to contrast well with each other.*)

If our light was too green, adding a magenta filter would balance it to a more neutral color.

Hard or Soft. Another quality of light we can easily control is whether it is “hard” or “soft.” Hard light produces a defined, crisp shadow-to-highlight transition and is produced by using a light source that is small, relative to the size of your subject. Small light sources cast hard shadows that yield high contrast in your image. Soft light is characterized by a soft, broad shadow-to-highlight transition and is produced by using a light source that is large, relative to the size of your subject. Large light sources create soft shadows and a “wrap-around” quality of soft light.

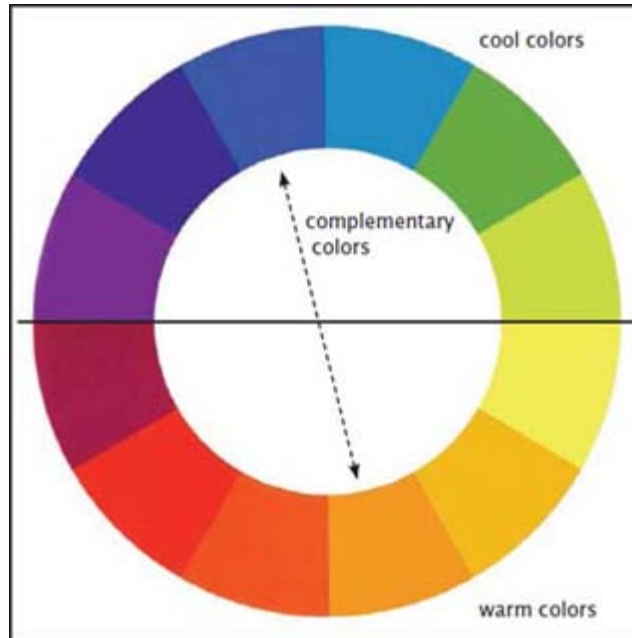


PLATE 3-9. The color wheel shows the relationship between primary colors. For any given color, the color directly across the wheel is its complement.

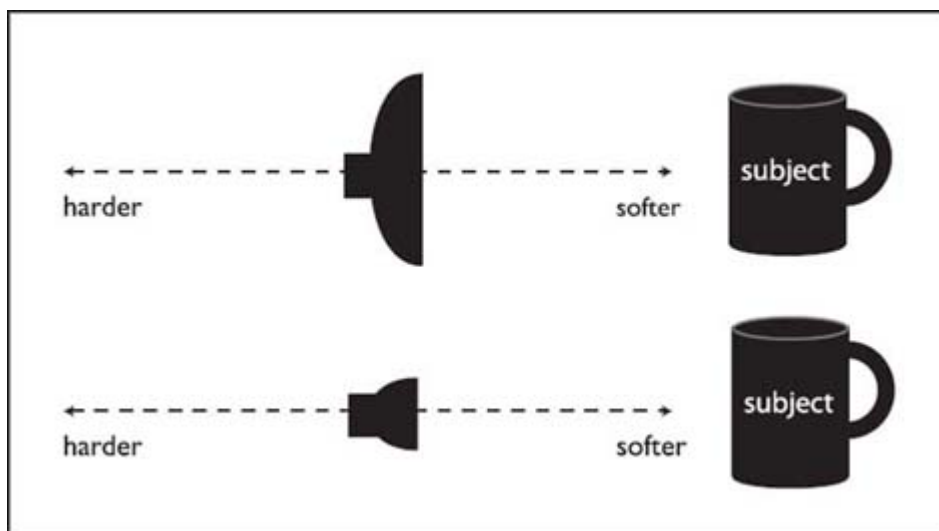


PLATE 3-10. A light attached to a softbox or parabolic produces soft light, but as it is moved farther from the subject, the light will record as hard because the increase in distance makes it smaller relative to the subject.

The quality of light can be controlled in two ways: by the size and type of light modifier you choose and by the distance between your subject and the light source. Let's use the sun as an example. The sun is physically a huge source—870,000 miles in diameter. However, it is also extremely far from us here on earth. On a bright, cloudless day, the sun is very small relative to a subject being photographed outdoors, thus the quality of light will be hard. On a cloudy day, the sun is still the same size and distance to the subject, but the clouds act as a massive diffusion panel that is much closer to the subject. This scatters the light in many directions and produces a softer quality of light. See [plate 3-10](#) for a visual representation of this.

Let's look at [plates 3-11](#) and [3-12](#) (next page). I was commissioned to photograph these ancient Chumash Indian artifacts for a collector and thought they would be great to use as illustration for hard and soft light. If you compare the photos, you will see the difference in the shadow areas of the images. [Plate 3-11](#) was lit with a single softbox, placed close to the subject, that produced a soft edge transfer. As a result, the overall image appears low in contrast. For [plate 3-12](#), the softbox was replaced with a 7-inch parabolic reflector placed at the same distance as the softbox. This

created more defined shadows with a sharper edge transfer. The image appears to have more contrast because it was created with a hard light source.



PLATE 3-11. Lighting this ancient Chumash Indian medicine bowl and rawhide scraper with a single softbox produced a soft shadow edge transfer and the appearance of low overall contrast. (ISO 200; 200mm lens; f/13; 1/125 second)



PLATE 3-12. The softbox was replaced with a 7-inch parabolic reflector at the same distance. This created a sharper shadow edge transfer and the appearance of more contrast. (ISO 200; 200mm lens; f/14; 1/125 second)

Intensity. If the light illuminating your subject is not sufficiently intense (bright enough), no image will be recorded. Photographers control the light intensity in two different ways: 1) by increasing/decreasing the output of the lighting devices itself and 2) by increasing/decreasing the distance between the light source and the subject. Obviously, the intensity of the light on the subject will have a huge impact on the exposure settings you choose for the image. Therefore, metering approaches for product photography are the next topic we need to discuss.

Metering the Light

There are two opportunities to measure the light in a scene: before it strikes our subject (this is called the “incident” light) or after it strikes our subject (this is called the “reflected” light). Let’s take a look at the differences between these types of light and how their measurement can affect your exposure.

The meter built into your camera measures the light reflected from the scene and averages it to 18 percent gray.

Reflected-Light Metering. The meter built into your camera measures the light reflected from the scene and averages it to 18 percent gray. This can present problems when your subject is much lighter or much darker than that “average” 18 percent gray. For example, a reflected meter reading of a bride’s white dress will balance the white to 18 percent gray, underexposing it. Conversely, a reflected meter reading of a groom’s black tuxedo will balance the black to 18 percent gray, rendering the tux gray rather than black. To achieve the correct exposure, you adjust your exposure setting or fix the exposure in postproduction. This may be

acceptable for portrait photography, but it's unacceptable in product photography.

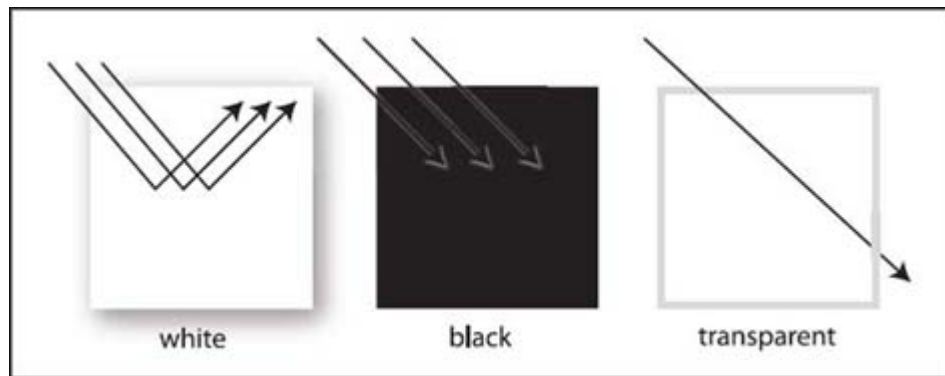


PLATE 3-13. Different inanimate objects have different properties. White objects reflect light, black objects absorb light, and transparent objects transmit light.



PLATE 3-14. This figurine was metered using the reflected-light meter in the camera. You can see the white dress and background recorded as gray. (ISO 200; 120mm lens; f/11; 1/5 second)



PLATE 3-15. An incident meter reading was taken and the camera set accordingly. The white dress and background now recorded as white— an accurate rendition of the figurine. (ISO 200; 120mm lens; f/16; 1/200 second)

One exception is when photographing objects, such as glass, that transmit light. With these subjects, you will have to take a reflected-light reading of the transmitted light. We will cover this later in the book. Another time when you'll want to take a reflected light reading is when you want to evaluate the background to determine its value relative to the subject brightness. For all other product photography, stick to incident light metering.

A white dress will record as white and a black tux will record as black.

Incident-Light Metering. Incident meter readings measure the light falling on the subject. Because of this, it is not affected by the subject's reflective values. If the light remains consistent, the exposure on the subject will not change, regardless of the subject's tonality or color. A white dress will record as white and a black tux will record as black.

A more accurate rendition of the scene can be obtained using a hand-held incident meter such as the Sekonic L-758DR, which measures both

flash and ambient light ([plate 3-16](#)). Most handheld meters have a white dome attached to the front that gives you a 180-degree angle of view. Additional attachments include a flat disc that can replace the dome for reflected-light readings of a scene. A handheld meter is essential when photographing products because it is imperative to accurately record the color and brightness of the object for reproduction.



PLATE 3-16. The Sekonic L-758DR meter measures both flash and ambient light.



PLATE 3-17. The main light is above the subject, and the meter is correctly positioned (facing up toward the main light) to get the correct reading.



PLATE 3-18. If the main light were repositioned at a 45-degree angle, the meter would follow the light to get the correct reading.

To obtain an accurate incident meter reading of your subject, place the handheld meter, with the white dome attached, at your subject's position

and point the meter back toward the main light source.



PLATE 3-19. The Pocket-Wizard Plus III transceiver. Photo courtesy of MAC Group.

When metering ambient light, set the meter to the ambient metering mode. Take a reading of the light illuminating the subject area by placing the meter at the subject position with the dome facing the light source. Then, adjust your camera's shutter speed and aperture according to the values on the meter's LCD screen. Should you want to produce an image with a shallow depth of field, the meter will give you the corresponding shutter speed for your desired aperture.

When metering flash, switch to flash mode. From the subject position, point the meter's dome toward the light source and trigger the flash. (If you're using PocketWizards [[plate 3-19](#)], you can trigger the flash remotely using the Sekonic L-758DR meter.) When using multiple strobes, separate meter readings should be taken of each, with the dome facing the strobe being measured. This technique will help you to determine the intensity and exposure of each light source falling on your subject.

4. Lighting Tools

The lighting equipment and modifiers you use for photographing people are mostly the same as the ones you will use to photograph products, though several differences must be noted. When photographing products in the studio on a table-top setting, depth of field becomes an important factor in retaining the sharpness of an object (or objects) throughout the photograph. Therefore, low-powered studio lights (less than 1000W) coupled with a standard medium softbox may not permit the use of the small lens aperture (f/11, f/16) required to keep the desired areas in focus.

I have chosen to concentrate on studio lighting throughout this book, though in some cases you may be able to utilize several hot-shoe flashes together with large scrim modifiers to photograph single, non-complicated, still-life product shots. In [chapter 6](#), you will see a few examples of products shot using small hot-shoe flashes.

AC-powered studio strobes are ideal for shooting products in a studio setting.

Studio Strobes

AC-powered studio strobes are ideal for shooting products in a studio setting. With the use of a portable generator or battery supply, studio strobes work well outside, too.

Modeling Lights. Studio flash units are equipped with a modeling light adjacent to the actual flash tube. This continuous source of light simulates the effect of the actual light (the light that will fall on the subject during the flash exposure) and allows for easier light placement and focusing. Though modeling lights can be adjusted independently of the flash tube, their

power is very low relative to the flash tube. The modeling light has essentially no effect on the final exposure when using shutter speeds faster than 1/30 second.



PLATE 4-1. The Hensel EH Pro Mini 1220P consists of a modeling light and flash tube that connects to an external power pack. Photograph courtesy of Hensel USA.

There are two basic types of studio strobes from which to choose.

Types of Studio Lights. There are two basic types of studio strobes from which to choose. Each has advantages and disadvantages.

Monolights are integrated strobes, meaning that the power supply, circuits, capacitors, flash tube, and modeling light are all contained in one unit. Because each monolight's power supply is self-contained, it is relatively simple to determine exposure and adjust intensity to create a certain look. For example, if you are using two 1000Ws (Watt-second) monolights, when both are on full power their combined output is 2000Ws. When one light is adjusted to half power, the combined wattage for both monolights will be 1500Ws—one light at full power (1000Ws) and one at half power (500Ws). Also, there are fewer cords to worry about (or trip over) with monolight systems than with power-pack systems (more on these in the next section).

One disadvantage to using monolights is the difficulty in adjusting a light that is placed high above a set. HenselUSA.com does make a remote that allows you to adjust the power of up to three different Pro Plus monolights from the camera position ([plate 4-2](#)). This can be quite a useful tool. The Hensel Expert Pro 1000 Plus monolight, for example, is a self-contained flash unit with a built-in radio slave, so one transmitter is sufficient for all units. The flash power can be adjusted over a range of 6 stops in 1/10-stop increments, for even the smallest fine-tuning of exposures via the hot-shoe remote ([plate 4-3](#)).



PLATE 4-2. A Strobe Wizard Plus. Photograph by Scott R. Stevens.



PLATE 4-3. Hensel Expert Pro 1000Ws monolight. Photograph courtesy of Hensel USA.



PLATE 4-4. A stand-alone power pack that can accommodate up to four studio lights. Photograph courtesy of Hensel USA.

Unlike a monolight, the power supply for a power-pack system is housed in a separate box-shaped unit that is designed to drive up to four flash heads ([plate 4-4](#)). When using more than one flash head, some units allow for equal (symmetrical) distribution between the heads. For example, if three flash heads are plugged into a 1500Ws separated power supply, each flash head would have an output of 500Ws of power, producing a symmetrical distribution. Other systems allow for asymmetrical distribution to various heads, which makes calculating exposure a bit more complicated. Some power pack units are equipped with channels, so that two lights share a power supply and a third light has its own power, allowing for both symmetrical and asymmetrical distribution.



PLATE 4-5. A Hensel Pro Mini 1200 AS power pack system with two light heads and a few modifiers. Most systems come complete with a carrying case that makes traveling easier. Photograph courtesy of Hensel USA.

The distinct advantage of using power packs is your ability to adjust the intensity of lights that are out of arm's reach—such as lights placed high above a set on booms. Additionally, the greater output of power pack units allows for the higher intensity of light that is required when using small apertures to retain focus throughout the subject area.

The Hensel Pro Mini 1200 AS power pack is designed with two generators that provide asymmetrical or symmetrical distribution. This small portable system has four channels, radio-controlled triggering, and power settings that can be adjusted in 1/10-stop increments. That is extremely important when shooting inanimate objects.



PLATE 4-6. Here's how a power pack works. You can also see its versatility with regard to adjusting power on up to four lights. Photograph courtesy of Hensel USA; graphics added.

On the Hensel Pro Mini 1200 AS, if using two flash heads plugged into channel A1 and B2 with the A+B switch selected, each flash would have an output of 600W—a symmetrical distribution of light going to each flash head. If you add a third light and plug it into channel B1, the output for channel A would remain at 600W, but each light head on channel B would have a divided output of 300W.

Continuous Lights

Commonly referred to as “hot lights” or “photofloods,” this type of light produces a continuous output of light rather than a “flash” or strobe effect. This means that as you set up your lighting, you can observe the actual light that will be used to make the exposure as it falls on your subject. You do not need to rely on separate modeling lights.



PLATE 4-7. Westcott Spider Lights offer a continuous, daylight-balanced lighting system.

Traditionally, the drawback to using hot lights was that they were balanced for warmer color temperatures, such as 3200K. Additionally, they could generate a lot of heat, meaning they could not be used for extended periods of time without problematic heat buildup. Today, however, there are continuous lighting systems entering the marketplace that are daylight-balanced (5500K) and do not generate as much heat as earlier systems.

A popular example is the Westcott Spider Light ([plate 4-7](#)), a uniquely designed system that accommodates five daylight-balanced bulbs into one light head. It has a low heat level that allows the lights to be used for an extended period of time.



PLATE 4-8. The Hensel C-Light 500. Photograph courtesy of Hensel USA.

Hensel also makes C-Light 500s and C-Light 1000s, continuous lights that are color balanced to approximately 3200K ([plate 4-8](#)). This would

dictate setting your white balance to tungsten. Since the Hensel C-Lights have a lot of power, they would be ideal for product photography.

The disadvantage to using this type of light is the lack of power generally necessary to obtain a small aperture (f/22, f/16, f/11) to retain focus throughout your subject. Fortunately, since products do not move like people, you can place your camera on a tripod and use a slower shutter speed to obtain your desired aperture. Be certain your shooting space is free of available light that may affect your exposure and put unwanted light on your subjects(s) and set.

Light Modifiers

Now that we have looked at different light sources, let's examine light modifiers—the tools that are used to sculpt the light into something a little more usable. A light modifier is an attachment that is placed on your light or between the light and subject to change the quality (hardness or softness) of the light illuminating your subject. Though there are countless modifiers on the market, I have chosen to feature the equipment I personally use in my studio.

With these sources, the light is scattered, making it softer and more diffused.

Soft Light. Softboxes, white reflectors, white cards, translucent scrims, an overcast sky—all of these sources will produce a soft shadow-edge transfer. With these sources, the light is scattered, making it softer and more diffused. (However, remember that the mere attachment or use of a “soft” modifier will not guarantee your quality of light will be soft; refer back to [chapter 3](#) for more on this.)



PLATE 4-8. Chimera and Hensel make high-quality softboxes that produce even illumination across the surfaces, ensuring even highlights on your products. Photograph by Scott R. Stevens.



PLATE 4-9. Light modifiers such as (left to right) parabolic reflectors, grids, barn doors, and snoots, all produce hard, directional lighting. Photograph courtesy of Hensel USA.

The softbox is perhaps one of the most important pieces of equipment you will need for photographing products. I highly discourage the use of any umbrella or octagon-shaped modifier for product photography, as the odd shape of these devices can cause unsightly reflections on the things you are photographing.

Hard Light. Bare bulbs, parabolic reflectors, grids, snoots, mirrors, bounced light from smooth or shiny surfaces (such as silver and gold reflectors), and direct sun—these sources all produce a hard quality of light. With these sources, the shadow-edge transfers will be more defined, so the lighting will look hard and directional. Again, it is important to note that the actual quality of the light will be directly related to the placement of the light relative to the subject.

Bouncing the Light. Fill cards and reflectors are used to redirect light onto an area of the scene or subject where it is needed. The devices come in many shapes, sizes, and surface finishes. Mirrors are also used extensively for adding bounced highlights and accents to your final images. Investing in numerous small and medium self-standing cosmetic mirrors is advised.

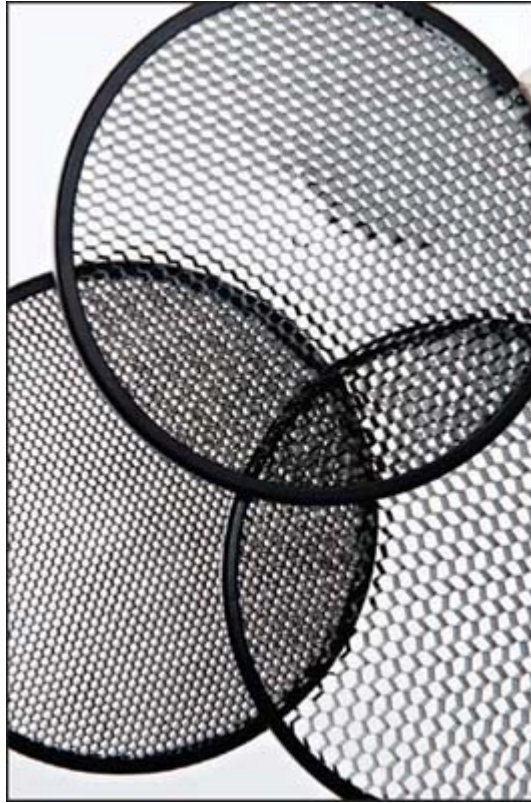


PLATE 4-10. Hensel grids direct and concentrate your light source (clockwise from bottom left: 20-degree grid, 30-degree grid, and 40-degree grid). These are essential tools for adding accent light to your product set.

Blocking the Light. In many cases, you will need to block light from illuminating portions of your set. Flags (also called “gobos,” short for “go between”) and barn doors are often used for this purpose, helping you shape the light or reduce unwanted bounce light. Because flags are typically solid black, they block all of the light, preventing it from reaching the subject.



PLATE 4-11. Black flags can be used to block light from striking areas of the scene or subject where it is not wanted.



PLATE 4-12. Sunbounce offers a large variety of reflectors, scrims, and gobos that will help you block and redirect light.

Cutting the Light. Nets (or cutters), dots, and fingers are indispensable pieces of equipment for product photography studios. Nets allow you to reduce the intensity of the light source on a specific area of your set. You will see these specialty tools used extensively throughout this book. Advantage Gripware makes durable nets in a variety of different sizes and densities. When I need to reduce the intensity or brightness of light on a smaller area within an image, I use dots (small, circular cutters) and fingers (longer cutters) from Westcott.

You may be thinking, “Is all this equipment really necessary?” The answer is yes. Product photography requires some unique equipment and tools because, unlike in portraiture, we can’t enhance our subjects with makeup or postproduction editing. When you photograph products (other than food), you don’t alter the products because you are trying to show the object as it is. Getting it “in the can at capture” is vital, and you’ll need an array of tools to accomplish this ([plate 4-15](#)).

Nets allow you to reduce the intensity of the light source on a specific area of your set.



PLATE 4-13. From left to right, Advantage Grip-ware's 18-inch black flag, double net (reduces double the amount of light on an area), and single net (cuts single amount of light on an area). All can be attached to a grip arm and boom for easy positioning. Photograph by Scott R. Stevens.



PLATE 4-14. Westcott makes dots and fingers that attach to a C-stand grip. Many times, it is necessary to reduce the amount of light on a small area within your photograph. If less light is

required, simply double up the dots and/or fingers to create double the light-cutting effect.



PLATE 4-15. You can make your own flags, light cutters, and scrims. Materials that work well include rip-stop nylon, black velvet or felt, black mesh, household window screen, and velum. Photograph by Scott R. Stevens.

I am not suggesting you go out and buy hundreds of dollars in flags, nets, dot, fingers, and softboxes. Eventually you *will* have to invest in your business, but for now you can make many of your own modifying tools. Advantage Gripware, for example, sells empty flag frames so you can make your own.



PLATE 4-16. The A2030DKIT Avenger C-stand with boom arm is a necessity in your studio. Many times your main light needs to be above your subject. Photograph courtesy of MAC Group.

Grip and Support Equipment

The most common placement of your light is above and/or slightly behind your product or set; therefore, specialty devices called C-stands are very important in your studio. The C-stand has a wide base to attach a sandbag for additional support and can be fitted with a boom arm to allow for overhead light placement without the stand appearing in the final image.

Plates 4-17 and 4-18 show many inexpensive items that are useful to have on hand in the studio. As you are shooting products, these tools will prove useful for positioning and manipulating your subjects and any surrounding props in the shot.

Plate 4-17 shows some of the items I use to prop up and position small light modifiers—and even the products themselves. These include:

Iron Pipe Stubs. Found at your local hardware store, pipe stubs (**A**) are heavy enough to provide good support and come in a variety of heights to prop up fill cards or items within your set without toppling over.

Spring Clamps. Manfrotto offers a large variety of useful clamps (**B**) that can be placed on or off stands to help support reflectors, mirrors, or fill cards.

Swivel Umbrella Adapter. There are times when a studio strobe head is too large to illuminate the desired area. In those cases, I use this adapter

(C) to hold my Nikon Speedlights.



PLATE 4-17. Often it is necessary to prop and support fill cards, cutters, and even the product itself (to achieve a specified composition). These are some of the devices I use in my studio.

Manfrotto Grip Arm and Head. I find it very useful to have several extra grip arms (D) available that can fit on an average light stand. These can be used to support cards, nets, flags, and mirrors.

Wood Blocks. I have a box of wooden blocks (E, L) in different shapes and sizes to ensure objects I am photographing can be placed in the proper composition.

Small Tools. Having easy access to a variety of small tools (F) is always handy.

Knives. Straight-edge blades (G) for cutting background paper and such should be included in your tool kit.

A-Clamps. A-clamps (H) are a necessity in your grip bag. These can be used to hold background paper, cards, fabric, etc.—and one is never enough!

Hardware. I keep a variety of washers, nuts, and pipe reducers (I, J, K) on hand. These are useful when I need to raise items in small increments to get just the right positioning.



PLATE 4-18. Additional items to have on hand are various adhesives, tapes, solvents, and cleaners that will help support and clean your products. Paying attention to the little details in an image will save time in postproduction—and time is money!

Plate 4-18 shows some additional items I like to have on hand to ensure my products are clean and dust-free before shooting—and to hold items securely in their proper place on the set. Paying attention to the little details in an image will save you time and money.

Compressed Air. If you live in an arid area like I do, canned air (**A**) is going to be very useful to dust your set—especially when working with black, shiny, and glass products.

Goof Off®. Goof Off (**B**) is great for removing any adhesive that may be left on the products you are photographing.

Glass Cleaner. Choose a streak-free variety of glass cleaner (**C**) to ensure clean, flawless surfaces.

Soft Cloth. Cloth diapers (**D**) are great for dusting glass objects—they won't scratch surfaces, are lint-free, and aren't treated with anti-static chemicals that will leave residue on glass surfaces.

Black electrical tape is useful for fastening objects together with little to no reflective contamination on your set.

Gloves. Lint-free cotton gloves (E) can be found at your local camera store to help prevent unwanted fingerprints on glass and shiny objects.

Clips and Clothespins. Various sizes of clips and clothespins (F, G) are useful for securing small pieces of fabric and clothing.

Velcro®. Self-stick Velcro (H) and other adhesive fasteners are useful for attaching materials together on your set.

Sticky Dots. Adhesive dots (I) come in a variety of sizes and can be found in the stationery section of your local office supply store. They are used to semi-permanently adhere items together or hold them in place.

HandiTAK®. This sticky, shapeable material (J) can be used to attach your products to a support or to your desired surface.

FIMO®. Most art supply stores carry this soft modeling clay (K), which works similarly to HandiTAK.

Electrical Tape. Black electrical tape (L) is useful for fastening objects together with little to no reflective contamination on your set.

Shurtape®. This is an amazing product, found at your local hardware store. When placed on the back of fabric items, this pliable tape (M) will allow you to bend, shape, and mold even the toughest items to perfection. You can use it to shape the straps of a backpack or refine the position of ribbons, for example.

Gaffer's Tape. Unlike multi-purpose tape, gaffer's tape (N) is strong and will not leave behind adhesive residue.

Artist's Tape. This archival tape (O) can be removed easily without damaging paper products, such as gift cards and bags.

Masking Tape. Masking tape (P) has a lot of uses on the product-photography set and is great to have around.

5. Principles of Lighting Products

Basic Light Functions

Just as an artist uses pigments to depict his subject in a painting, a photographer uses light to depict his subject in a photograph. Several lights may be needed to achieve the desired effect; these are commonly described in terms of their function in the specific setup. Keep in mind that any type of light source/modifier can perform any of the following basics functions.

Main Light. The main light is the primary source of illumination on the subject. It creates the sense of light direction on the subject and casts the shadows that reveal the product's shape, form, and texture.

Fill Light. The fill light is used to open up (make lighter) the shadow areas created by the main light.

Background Light. Also called the separation light, the background light is used to illuminate the background and create tonal separation between the subject and the background.

Accent Light. Like the background light, the goal of the accent light is to enhance separation. However, this light is directed at the subject (or some element of the scene other than the background) to create highlights and define texture.

The Size of the Light

For small table-top setups, as illustrated throughout this book, a medium softbox works just fine. When you're lighting larger objects, such as motorcycles and cars, the softbox must be large enough to cover all the surfaces of the object. As the size of your light source increases, the

power must also increase in order to retain a small enough aperture (f/22, f/16, f/11) to ensure sharpness throughout the scene.

Types of Light Sources

We touched on this subject briefly earlier in the book, but as we contemplate basic lighting setups we need to revisit another important decision: the quality of the light. As noted above, any light source or modifier can be used in any light function. Which one(s) you choose will depend on the look you want to achieve. Let's do a quick review with some additional examples.



PLATE 5-1. A medium softbox was placed about 60 degrees to camera left. (ISO 200; 82mm lens; f/11; 1/125 second)



PLATE 5-2. The same softbox was placed on-axis with the camera, producing a flatly lit image with no shape or form on the subject. (ISO 200; 65mm; f/11; 1/100 second)

Soft Sources. To create a soft edge transfer between the shadows and the highlights, choose a softbox or other soft light modifier (see [chapter 4](#)).

The placement of this light will determine the degree of tonal variation on your object. **Plate 5-1**, an image of my grandmother's antique vase, was created using a medium softbox relatively close to the subject. It was set at approximately 60 degrees to subject right to show the form and shape of the vase. An additional white card was placed behind and to the left of the subject for further shape and separation. **Plate 5-2** shows the same vase, but the softbox was moved near the camera axis. This produced flat lighting—it reveals no shape, form, or depth. This is to be avoided.

Hard Sources. To create a hard edge transfer between the highlight and the shadows in your image, choose a parabolic or other hard light modifier (see [chapter 4](#)). Again, placement is important to accurately “pick up” the desired texture of your subject. I created [plate 5-3](#) (an image of a jewelry bag that was a gift from my sister before she passed away) to illustrate the use of a hard light source to show texture. A single light with a snoot attached was skimmed from a low angle across the bag to create defined shadows on the subject’s fabric. Compare this to [plate 5-4](#), which was shot with a softbox placed at the camera axis. Notice there are no defined shadows and the fabric looks flat and non-dimensional. It is difficult to discern that the product is made of a soft velvet fabric with shiny gold accents.



PLATE 5-3. Skimming hard light across the subject’s fabric revealed its texture. (ISO 200; 90mm lens; f/11; 1/125 second)



PLATE 5-4. Soft, on-axis light made the subject's fabric look flat. (ISO 200; 95mm; f/11; 1/12 second)



PLATE 5-5. Lighting this shiny bottle with reflected sources produced pleasing highlights that helped define the shape of the product. (ISO 200; 65mm; f/8; 1/100 second)



PLATE 5-6. Switching to direct light resulted in a much less pleasing look—with some unwanted reflections. (ISO 200; 65mm; f/8; 1/100 second)

Reflected Sources. A reflected light source is light that reaches the subject only after it bounces off something. This is the only way to illuminate shiny metal objects. As we will see in [chapter 6](#), when you photograph shiny or mirrored objects, you are actually photographing the *reflection of the light source* on your subject. It is never a good idea to directly light a highly reflective subject—as shown in the following illustrations.

A reflected light source (light bounced off a large white card) was used to illuminate the aluminum bottle seen in [plate 5-5](#). This created the highlights that shows the bottle is shiny and round. Other reflectors were used to separate the subject from its background. In contrast, look at [plate 5-6](#). Here, using the incorrect light position along with the wrong light modifier created distracting reflections on the product. Keep in mind that shiny objects will also reflect your surroundings, which can produce additional undesirable highlights in your image.

The Angle of the Light

When photographing people, there are a few common angles at which photographers place the main light relative to the subject. When photographing inanimate objects, on the other hand, there may be many different main light placement options available—or there may be only one light placement option that will work. This will be dictated by the object you are photographing, the supporting props, the background, and the surface on which your subject rests. Just as in portraiture, however, our goal is to use the interplay of light and shadow (an effect called *chiaroscuro*) to create the illusion of shape and depth.

Determine the Composition, Add the Light

Placing your main light can be tricky, and it's dependent on the subject and camera angle you choose. I have found it is best to compose the set and camera angle as required by the client/art director before I start to

light my subject(s). Only when the final composition is determined can I efficiently light the objects for the best effect.

Let's look at some examples. The subject for this sequence, a ceramic replica of a German castle, was chosen not only for its visual interest. It also produced overall diffused reflections (more on this later in the chapter) but with a slight highlight on the wood base that further identifies the direction of the light source.

0 Degrees. Plate 5-7 was lit with a single main light (a softbox) placed on the camera axis. While it is well exposed, the lighting produces no shadows, so there is no sense of the product's shape or intricate detail and texture.

45 Degrees. Moving the light source approximately 45 degrees to camera right (plate 5-8) allowed the light to wrap around the product, creating pleasing shadows on the castle. Careful light placement (even when shooting with one light) can add depth and shape to your images.

90 Degrees. Moving the light to a position approximately 90 degrees to camera right (plate 5-9) created the look of more depth; the shadows on the castle appear stronger and you get a sense of the intricate detail and texture on the ceramic piece.

Backlight. Placing a single softbox behind the castle produced even more defined shadows on the front of the product (plate 5-10). It should go without saying that when using a single light source, this placement is not ideal. However, when using multiple light sources, a backlight source on the subject can be an effective addition to the setup. Notice the separation it gives between the subject and the background.



PLATE 5-7. Main light at 0 degrees (on axis with camera).



PLATE 5-8. Main light at 45 degrees to camera right.



PLATE 5-9. Main light at 90 degrees to camera right.



PLATE 5-10. Main light placed behind the subject.



PLATE 5-11. Main light placed above and slightly behind the subject.

Placing a softbox above and slightly behind your subject produces beautiful highlights and shadows.

Top Light. Placing a softbox above and slightly behind your subject produces beautiful highlights and shadows (**plate 5-11**). The placement works quite well for many subjects. However, you can see that a single light source like this is not always the final solution to lighting things. Further accent light sources, such as mirrors and reflectors, would have added “pop” to this one-light setup.

Determining the Correct Angle. Let’s look at another image sequence, demonstrating a simple mirror setup. Since the mirror produces a direct reflection (more on this later), there is only one correct angle at which to place the main light. **Plate 5-12** shows a poor placement of the main light, coupled with the incorrect light modifier selection. As a result of these poor choices, the mirror did not receive full coverage from the main light.



PLATE 5-12. Because the main light was fitted with a small parabolic modifier that was incorrectly placed, the mirror did not receive full coverage.



PLATE 5-13. Adjusting the angle of the main light and switching to a softbox ensured that the mirror received full coverage from the main light.

Plate 5-13 shows the correct placement of a light with the proper modifier: a softbox. This covered the entire surface of the mirror for a much more appealing look. The reflected light source is still seen in the final image, but now there is ample coverage. **Plate 5-14** shows the setup.



PLATE 5-14. Here's the setup used to create [plate 5-13](#). (Keep in mind that this setup shot was photographed from a different angle than [plate 5-13](#).)

There's an easy way to find the right main-light angle in a setup like this: Shine a flashlight or laser pen onto the surface of the mirror (or other shiny subject) from the camera position. Watch where the beam strikes

when it bounces off the mirror—that's where your main light should be placed ([plate 5-15](#)).



PLATE 5-15. The white arrows show you how to find the proper main-light placement for shiny objects (things that produce a direct reflection) like this mirror.

The Subject Is the Active Player

When photographing people, your approach to lighting can be subjective—you can modify your lighting approach to create the look you want. As the previous image sequence reveals, however, when photographing products your approach must be more objective and based on the object's physical appearance (not your interpretation of that appearance). This means that the subject itself will determine your lighting approach, making it the active player in your lighting decisions.

Let's consider one example. Unlike people, products have a wide variety of surface efficiencies that must be considered when lighting them. Objects

with high reflectance are said to have a high surface efficiency; conversely, the lower the reflectance, the lower the surface efficiency. This will determine many of your lighting decisions.



PLATE 5-16. A matte ornament photographed with a 7-inch parabolic reflector and a white card for fill on the shadow side of the product.



PLATE 5-17. A matte ornament photographed with a medium softbox and a white card for fill.

The following sequence of images ([plates 5-16](#) through [5-21](#)) shows three common Christmas ornaments. You can see the difference in how the light reacts to each different surface—from a shiny finish (high surface efficiency) to a dull one (low surface efficiency). By knowing the level of reflectance of the objects you are photographing, you will be able to select the lighting tool and techniques that will best suit them. Additionally, it is

important to note that when you have multiple subjects on set that have different surface reflectances, this will present further issues with the type of lighting, modifiers, and placement of your light source(s).



PLATE 5-18. A shiny ornament photographed with a 7-inch parabolic reflector and a white card for fill.



PLATE 5-19. A shiny ornament photographed with a medium softbox and a white card for fill.

Plate 5-16 shows a matte-finish tree ornament. The main light for this image was a 7-inch parabolic reflector on a single monolight. The highlight from the hard light has a defined, hard edge transfer. Due to the low surface efficiency of the ornament, this type of light source can be used effectively.

To illustrate a different highlight on the surface of the same matte ornament, in [plate 5-17](#) the 7-inch parabolic reflector was replaced with a medium softbox. Notice that the highlight has a softer shape and a more gentle highlight-to-shadow transition.

Going back to the 7-inch parabolic reflector, I replaced the matte ornament with a very shiny one ([plate 5-18](#)). Shiny products have mirror-like qualities, so everything on your set has the potential to be reflected on your subject, which may be distracting. Comparing this to [plate 5-16](#), we can see that the white fill card is now more defined because of the higher surface efficiency of the subject. Also, notice the change in the highlight. On this shiny ornament, the light produced a very hard and unflattering highlight.

For [plate 5-19](#), the parabolic reflector was again replaced with a softbox. It, too, produced an unflattering reflection on this subject. While the image is better than the previous one, this is not the ideal approach to lighting shiny objects.

A popular solution when lighting mirror-like subjects is to use a light tent or to surround your subject with translucent scrims or velum paper. The disadvantage to using such a product is that shiny objects will “see” and mirror their entire surroundings—including the seams and wrinkles of the tent. As you can see in [plate 5-20](#), this can be quite distracting. It should be noted that a large amount of retouching was necessary to remove the reflection of my camera. If you are considering using a tent or light cube, Lastolite distributes a light tent that is completely seamless allowing for clean, even illumination. (In [chapter 6](#), you will learn how to properly use a light tent.)

A popular solution when lighting mirror-like subjects is to use a light tent ...



PLATE 5-20. The shiny surface of this ornament reflected all the seams and wrinkles inside the light tent.



PLATE 5-21. Things become even more complex when a scene includes objects with different surface efficiencies.

How you light one subject will affect all the other subjects in your composition.

The final illustration in this sequence (**plate 5-21**), demonstrates how complex the situation can become when you are required to combine

products with different surface efficiencies in a single capture, which is the case on many assignments. Here, you really see the cause and effect of your lighting choices; how you light one subject will affect all the other subjects in your composition. For the purpose of illustration, I intentionally used the least desirable light source (a 9-inch parabolic reflector) on this image.

Reflecting on the Surface Qualities of Your subject

Objects typically fall into one or more of these four categories: diffused reflection, direct reflection, polarized reflection, or no reflection. As you saw in the previous image sequence, managing these reflections (or lack thereof) is the key to great product images.

Diffused Reflection. On subjects with diffused reflections, the incident light strikes the object and is scattered in many different directions. Objects that produce diffused reflections include white objects (such as white paper), some fabric, and plaster-made products. Objects that produce diffused reflections will appear the same in color and shape no matter the viewing or camera angle.

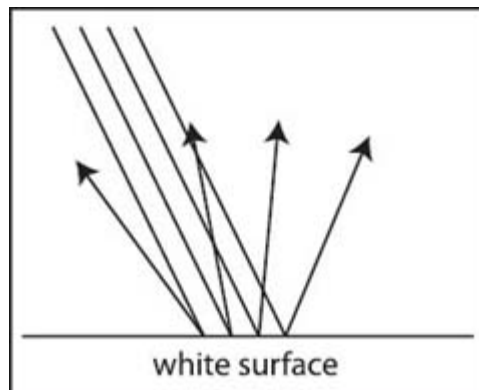


PLATE 5-22. Incident light is scattered to produce a diffused reflection.

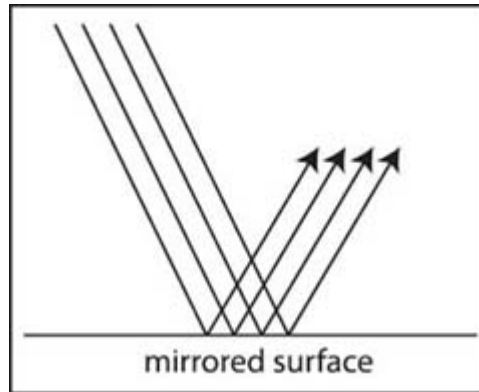


PLATE 5-23. The angle of incidence equals the angle of reflectance, creating a direct reflection.

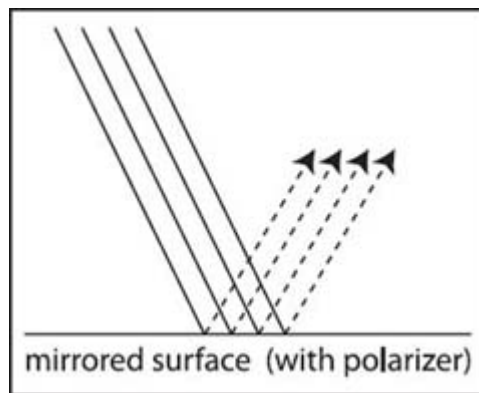


PLATE 5-24. A polarized reflection results in reflected light being lower in intensity.

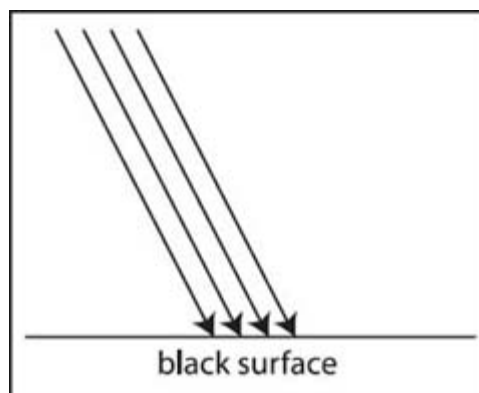


PLATE 5-25. No reflection.

Direct (or Specular) Reflection. Direct reflections are mirror-like reflections of the light source illuminating the surface. These bounce back from the subject at an angle that is equal to the angle at which the light strikes the surface (see [plate 5-23](#)) and appears at the same intensity as the

light of origination. Materials that produce direct or specular reflections include mirrors, water, and shiny metal objects. A direct reflection cannot be reduced, removed, or modified using polarizing filtration.

After controlling reflections, creating separation is probably the most important factor in lighting products.

Polarized Reflection. Because polarized reflections follow the same law as direct reflections (the angle of incidence equals the angle of reflection), it may be difficult to differentiate between the two. The key difference is that a polarized reflection appears dimmer than the light of origination (see [plate 5-24](#)). Different types of glass, wood, and plastic material can produce polarized reflections. When in doubt, you can simply place a circular polarizer filter on your lens and see if the reflection remains or disappears. If the reflection is removed by the polarizing filter, it was a polarized reflection.

No Reflection. Some subjects you encounter will have a mixture of one or more of the aforementioned reflections and others will have no reflective properties at all. Black things absorb light and can sometimes produce little to no reflections (see [plate 5-25](#)).

Knowing the reflective nature of the product(s) you are to photograph will make it easier to place your lights and thus work more efficiently. However, there are additional principles of lighting objects to consider when designing a lighting setup.

Separating the Subject

When photographing a product, you must not only separate the object from the background, you must also separate the object from the surface where it's sitting and any props you are using. After controlling reflections, creating separation is probably the most important factor in lighting products.

Plates 5-26, 5-27, and 5-28 (next page) show three simple white balls. **Plate 5-26** demonstrates that compositional placement alone cannot create a photograph with depth, dimension, and separation. Though the objects are clearly separated from each other, the lighting is flat and portrays no interest or depth. Adjusting the lighting would create better separation.



PLATE 5-26. The lighting is flat. The on-axis main light needs to be repositioned to create better separation. (ISO 200; 170mm lens; f/22; 1/100 second) Photograph by Dan Hagmaier.

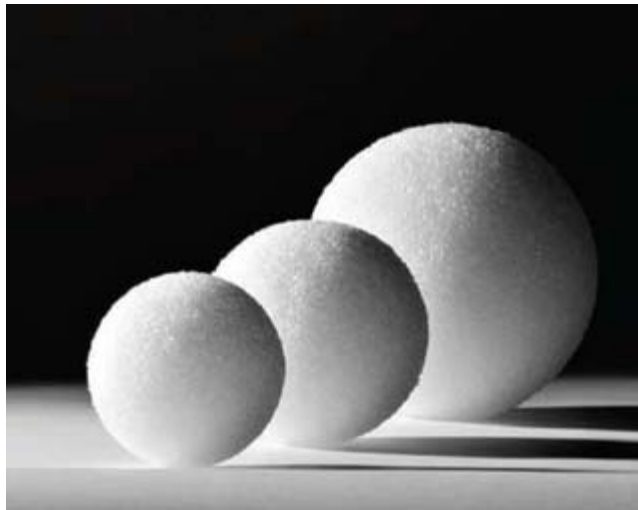


PLATE 5-27. Moving the main light to a 90 degree angle created pleasing shadows and depth on the balls, but the balls now blend into the background. An additional light is needed. (ISO 200; 170mm lens; f/22; 1/100 second) Photograph by Dan Hagmaier.

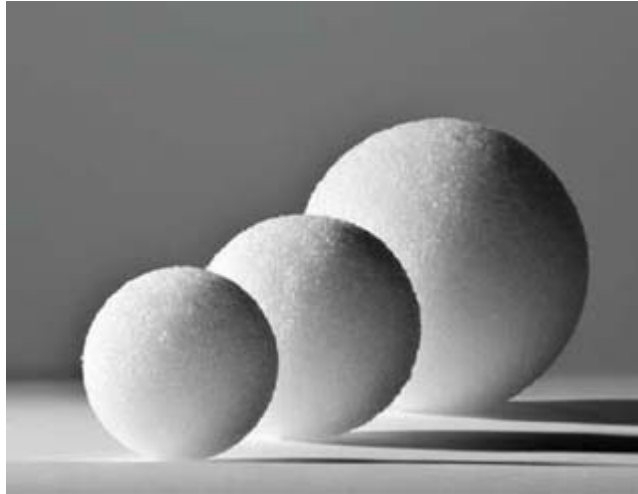


PLATE 5-28. Adding a background light separated the balls from the background. (ISO 200; 170mm lens; f/22; 1/100 second) Photograph by Dan Hagmaier.

In [plate 5-27](#), the main light source was moved off-axis—placed at a 90 degree angle to the balls, giving them more texture and dimension. However, the balls now blend into the background, which tells us that another light source is necessary to create separation.

Plate 5-28 was created using the same main light, but a background light was added to separate the balls from the dark background. If you study all three illustrations you will be able to see the differences and why this image is the best of the three.

This would be a simple exercise to practice in your studio. When you set it up, choose subjects and a background that are similar in tone. Overlap the subjects in the composition so you can practice creating separation between them. Make sure that your main light illuminates only your subjects (not the background) and that your background light illuminates only your background (not your subjects).

Watch for Tangents

In the design world, tangents (lines that touch a curve at a single point without crossing it) in product photography are taboo. These lines tend to confuse the viewer by reducing the appearance of separation between

subjects. Therefore, tangents are to be avoided when placing subjects in your scene.

I learned this rule the hard way. I was creating an image for a greeting card company and spent almost two hours working on the composition, propping, and lighting of the photo. Then, the art director pointed out numerous tangents and instructed me to reshoot. Since I had already broken down the set, I had to completely redo the photo—costing two more hours of production time. (There's another lesson: *never* tear down a set until you have final approval of the photo from the client or art director!)



PLATE 5-29. A tangent is a line that touches (but does not cross) a curve.



PLATE 5-30. A tangent was intentionally created as an example of what not to do. The red nozzle from the canned air and the red cap from the Goof Off® are tangent to each other, making it hard to differentiate clearly between the two products.

The Basic Setup

The most basic setup for product photography consists of two sawhorses, a sheet of plywood, a support to hold background paper, and a single light source.

The main source of illumination is typically a soft source, such as a softbox.

The main source of illumination is typically a soft source, such as a softbox. The size of the object you are photographing will dictate the size of your softbox. For the small table-top setups illustrated throughout this book, a medium to large softbox was used with a minimum power of 1000Ws to ensure sufficient depth of field for sharpness throughout the photograph.

This light is placed overhead using a support boom. The support boom is essential to avoid having a light stand show in the final image. Placing the light above the set and at a slight angle will give you soft wrap-around lighting on the subject, with a gradient effect on the background.



PLATE 5-31. A basic product photography setup with a medium softbox. Notice the sandbags used to secure the stands. Photograph by Scott R. Stevens.

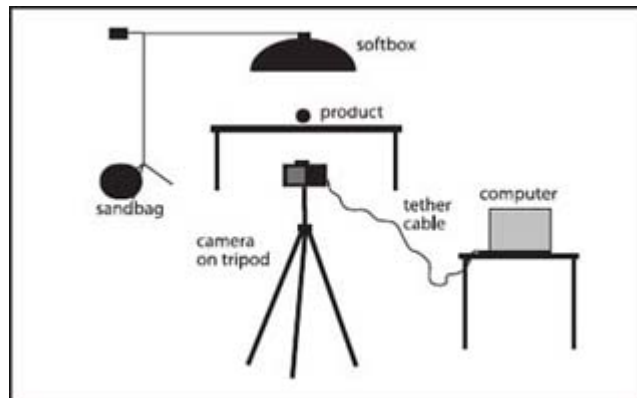


PLATE 5-32. Tethering to a computer allows your fellow team players to become part of the final image. When photographing people, I rarely use a tripod. With product photography, though, a tripod is essential to lock down your final composition and ensure the success of the final image.

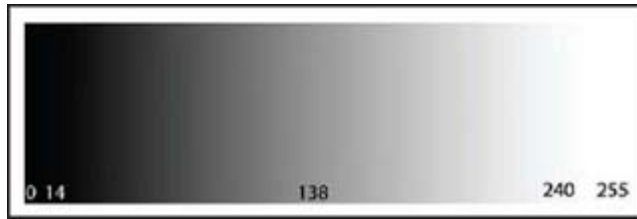


PLATE 5-33. For all kinds of print and web reproduction it is important to pay attention to the exposure values in your final capture. Your aim is to expose the blacks and shadows in your image to record a numeric value of at least 16 (black with detail). Then light and expose your highlights and whites to record a number value no higher than 240 on the histogram (white with detail).

0: black with no detail

12-16: low range for black with detail

138: middle range for midtones (not as critical)

230-240: high range for white with detail

250: A specular highlight can record at this point

255: white with no detail

Capture and Exposure

My preferred method of capture for products is to tether my camera to a laptop or computer and capture the image using Capture One Pro software. This ensures that each capture can be viewed large enough for me and my client (plus the art director, stylist, etc.) to see even the smallest detail and adjust as needed. I have had art directors instruct the stylist to move a product or prop as little as half a inch—which can require a slight change in light placement. These tiny but important changes cannot be seen on the camera's small LCD screen.

Being able to view your histogram and evaluate your exposure more precisely are additional benefits of tethering. When you tether and capture your image, Capture One Pro gives you the ability to read your exposure in even the smallest areas to ensure flawless reproduction. Any deviation from the suggested values could result in less-than-desirable reproduction. For example, a black object with RGB values under 16 will reproduce with little or no detail.

6. *Techniques for Single Products*

When you are approached to photograph a product for any reason—whether for print, catalog, or web-site viewing—the final image you present to your client should be of the highest possible caliber. The following case studies present step-by-step instruction on how to photograph and light the most common types of objects you may be asked to photograph. Each object selected here showcases a unique lighting technique to obtain a professional-grade photograph that will reproduce in a variety of media.

The final image you present to your client should be of the highest possible caliber.

Keep in mind the *precise setups* are specific to the particular object I have chosen to portray—but the *overall principles* will apply to any object with similar characteristics that you choose to place and shoot on your set. In each case study, I will present the final image first. Then, I will follow up with a step-by-step look at how I got to the final photo. I'll conclude each section with a detailed shot of the lighting setup and a pair of before-and-after images so you can study the changes.

Case Study 1: Paper Products

CLIENT: EAM Creative, Inc.

PRODUCT: Promotional mailer

DIRECTIVE: Place mailer on natural background, showcase spot-gloss on cover

You may be scratching your head and thinking, “How difficult could it be to photograph a piece of paper?” I thought the same thing—until I was hired by a large card company to photograph greeting cards and stationery for their catalog. As it turned out, photographing cards, bags, and the like presented some very difficult challenges. Browse your local greeting card store and you will be amazed at the vast variety of card stocks, embossed designs, glossy overlays, and metallic elements you see—and each surface requires its own lighting approach. Our first two case studies will show how to photograph and light two typical paper products.



PLATE 6-1. The final photo of the promotional mailer for EAM Creative, Inc. Notice that the spot-gloss shine on the white lettering shows up beautifully. (ISO 200; 82mm lens; f/13; 1/125 second)

I was commissioned by EAM Creative, Inc. to photograph their promotional mailer. My client gave me full creative freedom on the background, so I chose a slab of slate that coordinated with the overall feel of the company’s web site. The only directive they gave me was that the final photo had to show the specialized spot-gloss that traces the outside of the logo.

When you obtain a product, examine its attributes. In this case, the subject had a semi-reflective, spot-gloss finish, combined with a diffused,

non-reflective cover. Knowing I had a paper product with diffused highlights told me I needed a soft main light; I chose to use a softbox. An additional hard light source was needed to ensure that the texture and design on the cover would be visible.

How It Was Done. Plate 6-2 was created using a single monolight with a reflector and barn doors. This produced even illumination over the entire product, but there are two big problems. First, the spot-gloss around the white logo does not show up at all. Second, the shadows on the surface where the product rests are distracting at best. You could take this image into Photoshop® and try to correct that issue, but no amount of retouching would bring in the spot-gloss requested by the client.



PLATE 6-2. With a simple reflector as the main light, the spot-gloss is not visible and the shadows are unattractive (ISO 200; 66mm lens; f/13; 1/125 second)



PLATE 6-3. Switching to a softbox for the main light improved the look, but the mailer still lacks dimension. (ISO 200; 66mm lens; f/13; 1/125 second)



PLATE 6-4. The setup for [plate 6-1](#).

An additional light must be used to show texture on the cover and highlight the spot-gloss ...

For [plate 6-3](#), the main light reflector was replaced with a medium softbox to create softer illumination on the product, picking up the diffused highlights and the white logo. A couple of white cards were placed to camera right to fill in the shadows. Overall, the image is better than [plate 6-2](#), although it still lacks dimension. An additional light must be used to show texture on the cover and highlight the spot-gloss as directed by the client.

In [plate 6-4](#), we see the final setup. A softbox (A) was used as the main source of illumination. A monolight with a snoot (B) was added to create texture on the product. Not shown in the image is a black finger that was positioned between the main light and the subject at the time of capture to

block some of the main light from hitting the logo. This reduced the amount of light illuminating the cover, which enhanced the logo.

A simple white fill card (D) was placed to bounce light from the softbox onto the shadow side of the subject, opening up the shadows. Another fill card was placed at the front of the mailer to fill the unwanted shadows (C). The only purpose the mirror (E) served was to create a highlight on the surface of the slate; this was eventually cropped out per the client's request.



PLATES 6-5 AND 6-6. Before (left) and after (right).

Case Study 2: Embossed Foil Paper

PRODUCT: Embossed foil paper on Mother's Day card

PHOTOGRAPHER: Don Jones

DIRECTIVE: Show the texture and foil lettering on a greeting card

Photographing greeting cards is a difficult task. The wide variety of card stock ranges from flat diffused to highly reflective surface efficiencies. Additionally, many high-end greeting cards have embossed or raised lettering and designs that give the card an added flair. Still others have a combination of embossed and foil lettering that comes in many different sizes and fonts. Devising a lighting setup to capture all the elements of a greeting card can be quite challenging.

The following case study shows the steps photographer Don Jones (one of my product-photography mentors) used to shoot a greeting card with an embossed design and foiled lettering ([plate 6-7](#)). Don created this image

for a photo class on lighting foil-stamped and textured cards; it's the same technique I learned while working for Paper Direct, a card company.



PLATE 6-7. Here's the final image of a stunning greeting card that anyone would be proud to receive. The photo clearly shows that it is pink foiled with a beautiful embossed design surrounding the card. (ISO 100; 59mm lens; f/11; 1/100 second) Photograph by Don Jones.



PLATE 6-8. The card appears flat and the foil recorded as black. (ISO 100; 59mm lens; f/11; 1/100 second) Photograph by Don Jones.



PLATE 6-9. A hard light source was used at a low angle to define the texture. (ISO 100; 57mm lens; f/16; 1/100 second) Photograph by Don Jones.



PLATE 6-10. Reflected light was added to create pleasing reflections on the foil. (ISO 100; 57mm lens; f/11; 1/100 second) Photograph by Don Jones.

How It Was Done. Plate 6-8 is a well-exposed photograph of a greeting card, but it appears flat with no detail. Additionally, the foil appears black because it is reflecting the dark ceiling above. One would look at this card and believe the text was black. This is not an accurate representation of the product.

Plate 6-9 shows the addition of a point-source light at a low angle to define the texture of the embossed design. The techniques for capturing this texture were discussed earlier. Now the photo clearly shows highlights and shadows that define the texture of the design.

To create pleasing reflections in the foil areas of the card, which have a high surface efficiency, you must use a reflected-light technique. For this

setup, two snoots were bounced into a white card to illuminate the foil ([plate 6-10](#)).

Plate 6-11 (next page) shows the final lighting setup. A large softbox (A) placed close to the subject added soft overall fill, lightening the shadows. To direct light onto the heart on the greeting card, a small snoot (B) was bounced into a large white card. A second snoot (C) was precisely positioned to create a direct reflection on the text and other foiled areas on the card. A large white card (D) was placed behind the subject and adjusted to reflect light onto the product at the proper angle (remember, the angle of incidence equals the angle of reflectance). An accent light (E) further helped separate the background cloth from the product—as well as add dimension to the embossed design.

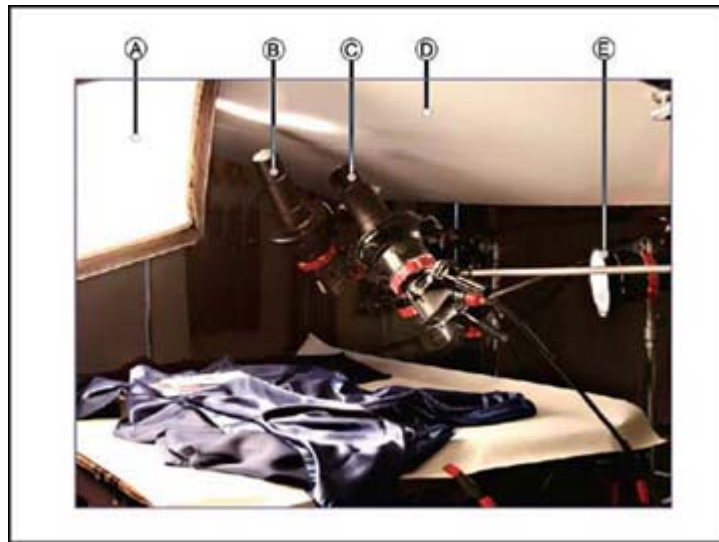


PLATE 6-11. The final lighting setup. Photograph by Don Jones.



PLATES 6-12 AND 6-13. Before and after. If you delivered the image on the left as your final shot, chances are you would not be called back for a second assignment. Photographs by Don Jones.

Case Study 3: Exposing for a Digital Screen

PRODUCT: iPhone®

DIRECTIVE: Capture a white gradient background with display screen in one shot

Electronic products can pose many difficulties because there are various types of metals with different textures and reflectances to deal with. For this section, I would like to demonstrate how to capture a digital display. In some cases it may be easier to just drop in a screen via Photoshop. Using that method, though, it is very difficult to obtain the correct highlights on the screen and product that make the shot look realistic. Therefore, knowing how to capture a computer screen in one shot can prove a valuable tool later on down the road.



PLATE 6-14. Final photo of an iPhone® created in a single exposure. (ISO 320; 120mm; f/11; ¼ second)

Photographing television and computer screens can be tricky, since no two have the same brightness. Back in the days of film, a television screen could be captured at around 1/30 second without getting black lines through the screen. However, today's high-definition screens are considerably brighter than my old standard television, so I decided to use an iPhone® to illustrate the technique for exposing an electronic screen ([plate 6-14](#)). If you try this setup, be sure the screen you are photographing is clean and in a static mount (to avoid blurring on the screen; we'll be making long exposures). If you like, you can take an ambient-light meter reading of the screen itself to determine a good starting exposure. Some devices allow you to adjust the brightness, which can be handy.

How It Was Done. **Plate 6-15** was created using a two-light setup. The phone was placed on a sheet of white Plexiglas. The composition was selected and the camera was placed on a tripod, since I knew I'd be using a

slow shutter speed. The main light was placed high above and behind the product to create a gradient background that would separate the phone from the background. A second accent light with a parabolic reflector and 30 degree grid was used for an accent on the camera-left side of the phone. Notice, however, that the screen (which was not illuminated for this example) is black with no detail; it looks matte (not glossy). Additionally, the light doesn't show the shape of the button at the bottom—and the silver component at the top is almost invisible.



PLATE 6-15. The screen is flat black and lifeless. (ISO 320; 120mm lens; f/11; ¼ second)

To create depth and bring shape to the lifeless black screen, a white card was placed in front of the product to add a pleasing highlight to the bottom right corner ([plate 6-16](#)). A second white card was secured with a C-stand boom arm to bounce light back onto the top silver component of the phone.



PLATE 6-16. White cards were placed to bounce light onto the screen, creating pleasing highlights that better reveal the screen's shape and surface texture. (ISO 320; 120mm lens; f/11; ¼ second)

Let's take a look at the final setup ([plate 6-17](#)) and go into further detail on how this image was created. A large white scrim was placed behind the set to ensure the reflection of the glossy white surface would record as white (**A**). The main source of illumination was a medium softbox (**B**). Notice that it was feathered toward the camera to create a pleasing gradient on the background. (*Note:* Due to the position of the main light, a solid black flag was placed over the camera lens to stop any lens flare.) A white card (**C**) was placed on a C-stand for soft fill, bouncing light onto the front components of the phone. A second white card (**D**) was used to create the highlight on the bottom corner of the phone. White Plexiglas (**E**) provided a clean white surface for this product shot. A single monolight (**F**) with a 12-inch parabolic reflector and 30 degree grid added hard light on the side of the phone, helping to separate it from the background.

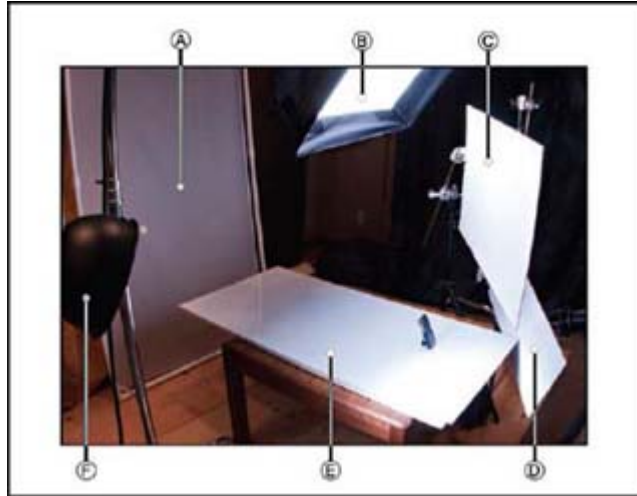


PLATE 6-17. The final setup.

Using this setup, the main exposure was made using strobe (with the modeling lights off to avoid creating unwanted reflections on the product's screen). I selected a long shutter speed to record the continuous light from the screen. Some people call this technique “dragging the shutter” because ambient light from the screen continues to be recorded (due to the slow shutter speed) after the burst of light from the strobes has passed.



PLATE 6-18 AND 6-19. Before (left) and after (right). If you compare where we started and where we ended up, the difference is very evident. Notice the highlight in the corner that gives the viewer a sense that the screen is shiny and has depth.

Case Study 4: Martini Glass (Black-Line Effect)

PRODUCT: Martini glass

DIRECTIVE: Show the shape of the glass as a black line on a white background

Photographs of glass can be beautiful, but lighting them is quite challenging. Glass has a high surface efficiency and must be lit using reflected light; direct lighting will always produce unsightly reflections. When photographing completely transparent glass, keep in mind that you are actually photographing what is *behind* it, so you must backlight the subject and expose for the background.

Photographs of glass can be beautiful, but lighting them is quite challenging.

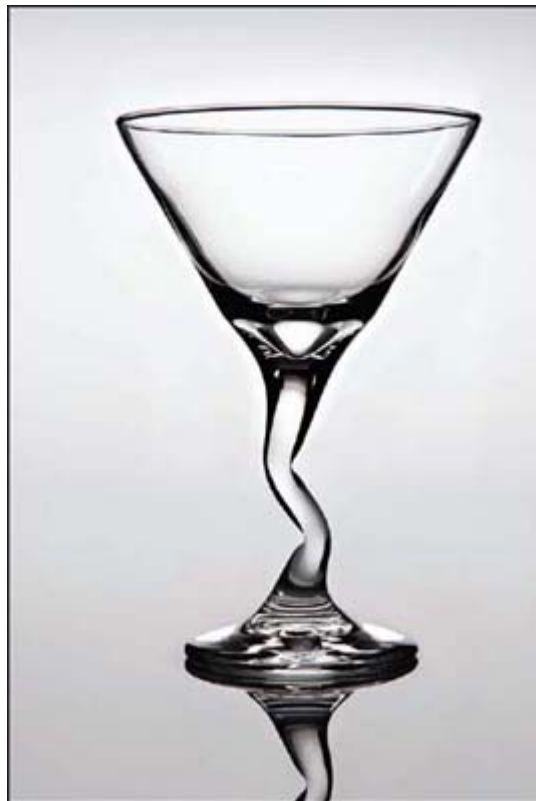


PLATE 6-20. The final image of the martini glass, shown as a black outline against a white background. (ISO 200; 70mm lens; f/13; 1/60 second)

The glass will reflect its surroundings and show any dust and water spots, so be sure your glass is cleaned then dried with a lint-free cloth. Additionally, it is best to take a spot meter reading of the background through the glass and open your aperture to produce a white background that falls within the printable reproduction range. Let's take a look at how [plate 6-20](#) was created.

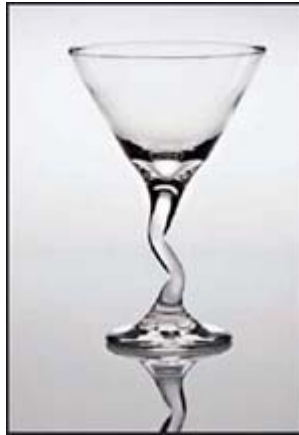


PLATE 6-21. Although this image is well-exposed, there's no shape or depth. (ISO 200; 70mm lens; f/13; second)



PLATE 6-22. Black cards were added to enhance the black-line effect.

How It Was Done. For [plate 6-21](#), the martini glass was placed on a sheet of white Plexiglas, which served as both the base surface and the background. The shiny Plexiglas added a beautiful reflection on the glass.

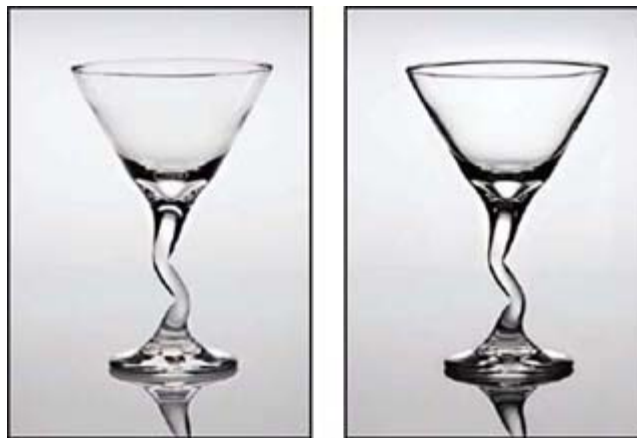
Though this image is well-exposed, there is no shape or depth to the product.

To shape the glass and separate it from the background, I added black cards ([plate 6-22](#)). These reflected back onto the glass, creating the black-line effect. When placing black cards, keep in mind that the closer the cards are to the subject, the smaller the black line will appear. Had I placed the cards further off the set, the width of the black line would have increased. This is the same basic principle as discussed with lighting in [chapter 5](#). The closer the light is to the subject, the harder the edge transfer becomes; the farther a light (or card, in this case) is from the subject, the softer the edge transfer appears. (*Note:* Because the black cards had to be placed very close to the subject to create the look I wanted, for the final version of this image I used Photoshop to expand the background area using data from the capture without the black cards.)

Plate 6-23 shows the complete setup. The main light source was a softbox (**A**) that lit the background and reflected back through the martini glass. Notice that the softbox was feathered onto the background, not the product. Black cards (**B, C**) were placed close to the glass to create a black-line effect. An additional black card (not visible in this image) was placed above the glass for separation on the rim. If you look closely at the final image, you can see two white highlights on the glass that were added using small white cards (also not visible here). These helped accentuate the shape of the glass, showing its shape.



PLATE 6-23. The final lighting setup.



PLATES 6-24 AND 6-25. Before (left) and after (right).

Case Study 5: Martini Glass (Black-Line Effect with Prop)

PRODUCT: Martini glass

DIRECTIVE: Show the shape of the glass as a black line on a white background, place a lime on the rim to create added interest

How It Was Done. Due to the reflective nature of the glass, adding a prop or additional elements to an image can present some problems. Keep in mind the “angle of incidence is equal to the angle of reflection” rule; the area where you choose to place your additional element/prop will dictate the degree of difficulty you’ll face in preventing unwanted reflections from appearing on your glass.



PLATE 6-23. The final image. Again, extra background area was added around the final presentation due to the close proximity of the black cards. (ISO 200; 70mm lens; f/13; 1/60 second)

As you can see in [plate 6-24](#), the same lighting setup was used as in the previous case study—but with the addition of small, square mirrors (A) to reflect light onto the back of the lime. A monolight with a small snoot (B) was bounced into the mirrors. Had the light been aimed directly onto the lime sitting on the glass, many specular highlights would have appeared on the surface of the glass. Finally, a square mirror (C) redirected light from the first mirror onto the front of the lime.



PLATE 6-24. The final lighting setup.

Case Study 6: Martini Glass (White-Line Effect)

PRODUCT: Martini glass

DIRECTIVE: Show the shape of the glass as a white line on a black background

If we want to reverse the previous look and create a white line around a transparent glass on a piece of black Plexiglas, we must have at least two studio lights. In this setup, we will make our exposure based on the light being reflected back onto the glass. The crucial thing to remember about the white-line technique is that we are actually photographing the white reflections on the glass, not the glass itself.

We will make our exposure based on the light being reflected back onto the glass.



PLATE 6-25. The final image. (ISO 400; 50mm lens; $f/13$; 1/40 second)

How It Was Done. For this case study, it makes no sense to show a before photo—the image would appear black. Therefore, we'll go straight to the final lighting setup ([plate 6-26](#)).

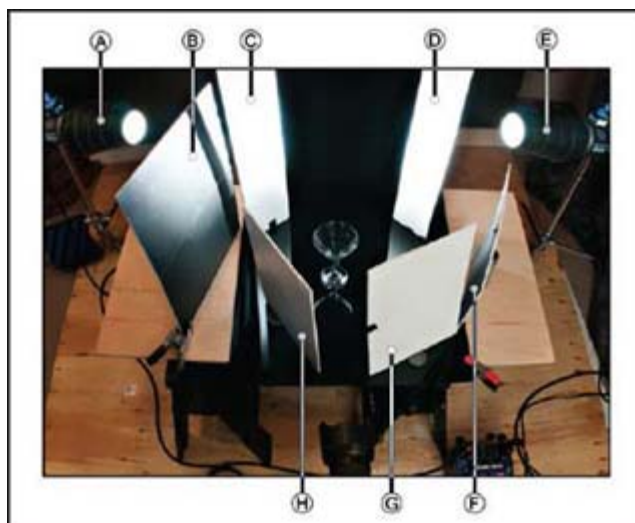


PLATE 6-26. The setup for the final image.

A single snooted monolight (A) was positioned low, behind and to the right of subject. This light was bounced into the white card (D), illuminating the left side of the glass. A black card (B) was used to block stray light from hitting other areas of the subject. Another white card (C) was the main source of bounce light on the right side of the glass. Notice that the card was placed away from the subject for a softer, less defined highlight. The main source of bounce light on the left side of glass was a white card (D), also placed at a distance to create a softer, less pronounced highlight. A second single monolight (E) was opposite the first light (A) to produce symmetrical highlights on both sides of the glass. This light was the main source of illumination for the right side of the glass, bouncing light off the fill card (C). Both lights were set to record the same exposure as well. Three more black cards (F, G, H) completed the setup by blocking light from hitting the lens. Not visible in the setup shot is a white card that was placed above and behind the glass to add a highlight that defines the rim of the martini glass.

Notice that the card was placed away from the subject for a softer, less defined highlight.

Case Study 7: Lit Candle with Embossed Metal Lid

PRODUCT: Candle with embossed lid

DIRECTIVE: Candle must be lit to showcase the heavy embossing on the lid

Showing a product's texture is quite important. Depending on the product, texture may be created by backlighting with a soft light source or by side lighting using a hard light source. Case studies 7 and 8 show how to capture texture on metal and to emphasize the embossing or personalization on a product.

The case was metal, so I needed to use either a soft light source or a reflected one.

Photographing a beautifully embossed, metal-cased candle ([plate 6-27](#)) presented several challenges. First, the case was metal, so I needed to use either a soft light source or a reflected one. In this case, the metal's brushed finish did not have a high surface efficiency, so a soft source as the main light was a good option. The other challenge was to capture both the flame and the product itself in a single exposure.



PLATE 6-27. The final image was created in a single capture. (ISO 200; 120 mm lens; f/11; 1/10 second)



PLATE 6-28. The softbox alone did not create a pleasing photo—but it's a good start. (ISO 200; 82mm lens; f/11; 1/125 second)



PLATE 6-29. The main light was repositioned and the candle was lit. (ISO 200; 120mm lens; f/11; 1/13 second)



PLATE 6-30. The addition of a mirror created a necessary highlight on the top of the lid, informing the viewer that the product is rounded. (ISO 200; 120mm lens; f/11; 1/13 second)

How It Was Done. I chose a soft, non-reflective fabric that provided a complementary surface for this stunning candle. A single softbox was placed above and behind the subject to enhance the heavy embossing on the lid. As you can see in [plate 6-28](#), the softbox alone did not produce a pleasing photograph. It is a good start, though.

For [plate 6-29](#), the softbox was repositioned over the product and feathered toward the background to produce a skimming light that left the front right corner of the lid with a pleasant shadow. When you skim a light low over a product, it picks up more detail and texture. Additionally, the candle was lit for this shot, necessitating the use of a slower shutter speed. The modeling lights were turned off so as not to overexpose the ambient light of the flame.

In [plate 6-30](#), a small but necessary highlight was created on the top of the lid using a mirror. Notice how the highlight visually cues the viewer that the lid is round and adds further depth and dimension.

When you skim a light low over a product, it picks up more detail and texture.

This set is simple to replicate ([plate 6-31](#)). A single net finger (A) from Westcott added dark reflections to help shape the embossing. A small softbox (B) was positioned above the candle and feathered away from the front of the product to create a pleasing shadow on the front of the candle and add depth to the embossed design. A square mirror (C) was used to create the striking highlight on the top right side of the candle lid. This highlight enhanced the shape and informs the viewer that the product is round with a semi-glossy surface. A flexible white scrim finger (D) was used to create a pleasing highlight on the front of the candle's lid, adding more shape to the subject. A final mirror (E) was positioned behind the subject to add slight separation between the subject and background.



PLATE 6-31. The final lighting setup.



PLATES 6-32 AND 6-33. The “before” image (left), viewed by itself, would have been an acceptable (though amateur) shot. However, when seen side-by-side with the final shot (right), you can see that the addition of fill and highlights made a huge difference.

Case Study 8: Engraving on Shiny Metal

PRODUCT: Metal business card case with engraving

DIRECTIVE: Show the shape of the business card case and the engraving on it

Perhaps the most difficult subject to photograph is metal with a mirror-like surface. The surface of this metal business card holder also had four distinct angular cuts on the lid, increasing the degree of difficulty in the lighting. Additionally, there was engraving that had to be shown. In this case, the challenge was somewhat simplified because the engraving was large and thick. Shooting for a large catalog company, I frequently encountered engravings that were much finer—and more challenging to light.



PLATE 6-34. The final image. (ISO 200; 105mm lens; f/10; 1/100 second)

How It Was Done. Mirror-like subjects require the use of reflected lighting techniques. In [plate 6-35](#), the metal appears black because it reflected the dark studio ceiling overhead. The softbox main light was placed behind the subject to add separation from the background and to ensure no direct reflection appeared on the product.

The softbox main light was placed behind the subject to add separation from the background ...

For [plate 6-36](#), the softbox was repositioned at an angle that was low enough to pleasingly illuminate the surface on which the product was

resting. A single white card was carefully placed in front of the subject to create a nice highlight on the front of the product. Notice the arrow at the top left of the main product. To add some light to the front of the pen, a piece of silver Shurtape® was strategically placed behind the product. The right arrow indicates a thumb print—a reminder to wear cotton gloves when handling any type of product. This is especially true for metal items, since fingerprints show up very well on reflective surfaces.

For [plate 6-37](#) (next page), three more white cards were positioned to reflect light onto the desired areas of the metal case. Notice that the cards were positioned only to reflect onto the angled corners of the case, leaving the center area dark. It is important to look through your camera when placing white cards to ensure they are creating the desired reflections.

A mirror was also placed at camera right to add a slight highlight to the right side of the case and the top of the pen. It should be noted that square mirrors create a harder reflection, while round mirrors provide a softer reflection.



PLATE 6-35. The mirror-like surface reflected only the dark studio ceiling. (ISO 200; 105mm lens; f/10; 1/100 second)



PLATE 6-36. The softbox was lowered and a white card placed for a highlight on the front of the case. (ISO 200; 105mm lens; f/10; 1/100 second)



PLATE 6-37. Three white cards (on the case) and a mirror directed light onto the pen. (ISO 200; 105mm lens; f/10; 1/100 second)



PLATE 6-38. A net finger was added to bring the highlights down to a printable range. (ISO 200; 105mm lens; f/10; 1/100 second)

After reading the histogram in Capture One Pro, I found the highlight readings were 250—above the acceptable range for holding printable detail.

I added a net finger to reduce the light to an acceptable highlight level of 235. You can see the net finger in the reflection on [plate 6-38](#). I positioned the net so that it produced a pleasing shadow, helping to create shape and depth to the angled metal case. Keep in mind the case is metal, not white, and this visual cue helps to convey the illusion of metal.

Notice there was only one light source, a softbox placed behind the set.

As you study the setup of the final image ([plate 6-39](#)), notice there was only one light source, a softbox placed behind the set. All other light was reflected or bounced from white cards and mirrors. The main light source consisted of a medium Chimera softbox (A) on a single monolight, positioned to create a pleasing highlight on the surface where the product rests. This was the source of light from which all the other reflections were made. A large narrow white card (B) held by an Avenger C-stand and boom was positioned to create the reflection seen on the product in [plate 6-36](#). A narrow white card (C) created the reflection from the main light on the left portion of the product. Another white card (D) created the back reflection on the top of the product. A round mirror (E) added a highlight to the pen and the back of the product. A square mirror (F) produced a more concentrated reflection on the pen. Another square mirror (G) directed light onto the front edge of the card closure. The highlight is barely noticeable, but it was necessary to separate the case latch from the dark business card that was used as a prop. A narrow white card (H) created the direct highlight on the top right side of the product. A narrow white silk finger (I) created the pleasing highlight on the top of the product and enhanced the engraving. (*Note: For an engraving with thin fonts and wispy, featherlike qualities, you might have to skim a hard light source over the engraving to create enough highlights to read the engraved wording.*) A black net finger (J) was used to reduce the highlight reading to a printable range.

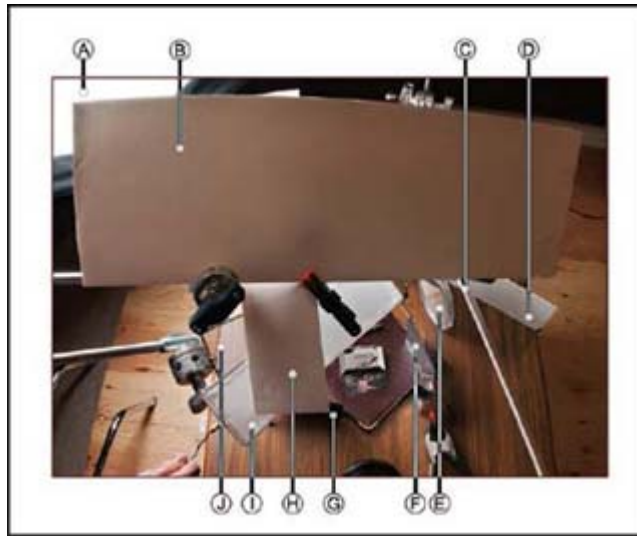


PLATE 6-39. The final lighting setup.



PLATES 6-40 AND 6-41. The before (left) and after (right) photos show a drastic difference in lighting. Keep in mind that the final image was created with one light source, white cards, and a few mirrors. The important principle here is simple: good photography requires good lighting and correct placement.

Case Study 9: Black on Black

CLIENT: Private collector

PRODUCT: Antique black vase

DIRECTIVE: Create a beauty shot of a black glass vase on a black background

I was commissioned by a private antique collector to create a beauty shot of an unusually shaped black vase. The client and I decided on a shiny black Plexiglas background to allow for a pleasing reflection of the subject. The

degree of difficulty was doubled because the vase was not only black, but also shiny. Second to mirrored metal, shiny black glass is perhaps the most challenging surface to light in product photography. Black glass has a very high surface efficiency and using reflected light is the only way to photograph such subjects.

The degree of difficulty was doubled because the vase was not only black, but also shiny.



PLATE 6-42. The final image. (ISO 400; 70mm lens; f/10; 1/80 second)



PLATE 6-43. For illustrative purposes, this image was created with a small speedlight. This is the wrong way to light shiny black subjects. (ISO 400; 70mm lens; f/10; 1/80 second)



PLATE 6-44. White cards added pleasing highlights to show the shape of the vase, but additional separation is still needed. (ISO 400; 70mm lens; f/10; 1/80 second)



PLATE 6-45. Reflected light provided separation at the bottom of the vase. (ISO 400; 70mm lens; $f/10$; 1/80 second)

How It Was Done. Plate 6-43 was shot with a small flash on camera to illustrate the *incorrect* approach to photographing highly reflective products and surfaces. As you can see, the shiny black vase and black Plexiglas act like mirrors, reflecting everything in and around your studio. Plus, the lighting is flat.

The technique used to create the final image was the same one used to produce the white-line image of the martini glass (case study 6). The vase is well-lit with white cards that were strategically placed to accent the unique shape of the vase, as seen in [plate 6-44](#). With these cards in place, we're well on our way to the final image, but we still need to add separation—especially in the back where the subject now blends into the black abyss of the surface on which the vase rests.

In [plate 6-45](#), you can see how the addition of reflected light onto the base of the vase added depth and separation. Notice the specular highlight just above the reflections of the flowers on the vase. This was the only reflection that was unavoidable and removed in Photoshop. No other alterations were made to this image other than a lot of dust spotting—black glass attracts a *lot* of dust!

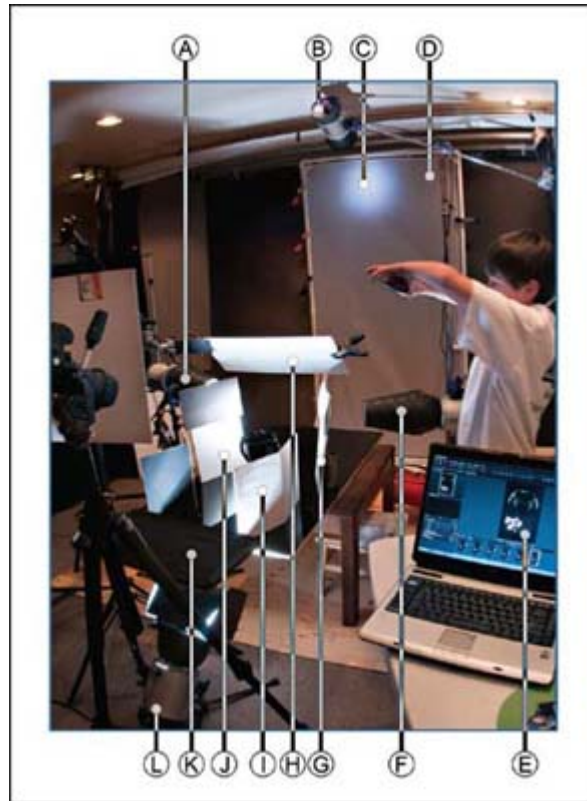


PLATE 6-46. The final lighting setup.

As you study [plate 6-46](#), you can see how similar the lighting for this shot was to the setup used in case study 6. The exception is the addition of two monolights. One light (L), was placed low and aimed toward a white card (H) that created a highlight on the top rim of the vase. A solid black flag (K) blocked this light from putting unwanted spill on the subject. Another monolight with a 7-inch reflector (B) was placed at the exact incident angle to indirectly light the base of the vase. A light (A) was bounced off a white card (G), creating the highlight on the right side of the vase. A second light (F) was bounced off a white card (J), creating a symmetrical highlight on the left. You will have to move the cards front and back and side to side to obtain your desired highlights. Illumination from another light (C) shining through a white scrim (D) produced the highlight on the base of the black Plexiglas, separating the vase from its surface. (Note: I made the white scrim from white rip-stop nylon and PVC piping.)



PLATES 6-47 AND 6-48. Before (left) and after (right). As noted, the only retouching was for spotting and to remove an unavoidable specular highlight from the front of the vase.

An additional white fill card (**G**) added fill on the front of the vase. Another white card (**H**) created the highlight on the top rim of the vase, increasing the sense of depth, separation, and shape. A black card (**I**) blocked light from striking the lens and causing flare. At the bottom right of the set, you can see the tethered image captured via Capture One v.6 (**E**).

Not shown are a couple mirrors that were used to light the flowers in front of the vase. My son, Tyler, is shown holding another mirror that added accent lighting to the back of the flowers.

Case Study 10: White on White

PRODUCT: Matte white chess piece

DIRECTIVE: Photograph a white product on a white surface with a white background

Product photographers are frequently asked to photograph items on a clean white background. In some cases, this is so the background can be dropped out (or knocked out) and replaced with another color or image. For this usage, the product must be exposed so that it doesn't blend into the background—especially tricky if the product itself is pure white. Fortunately, our eyes and brains will perceive a white object to be white if

the background is slightly darker than a printable 235 white, such as a light gray. In the following white-on-white illustrations you will notice the background does not record as pure white; it records as slightly gray so that our brains perceive the white *object* as being white (see [plate 6-49](#)).

The product must be exposed so that it doesn't blend into the background...



PLATE 6-49. In the final image, the subject is well-defined and does not blend into the background. (ISO 200; 120mm lens; f/22; 1/60 second)



PLATE 6-50. This is an example of a poorly lit white-on-white image; the top of the chess piece disappears into the background. (ISO 200; 120mm lens; f/22; 1/60 second)



PLATE 6-51. The addition of a net dot reduced the exposure only on the top of the chess piece, separating it from the background. (ISO 200; 120mm lens; f/22; 1/60 second)



PLATE 6-52. A second fill card was added to camera left to open up the shadows. (ISO 200; 120mm lens; f/22; 1/60 second)

How It Was Done. Plate 6-50 shows a poorly executed white-on-white image. There are two possible outcomes when printing an image like this—and neither is good. (Keep in mind that, at press time, the photographer typically has little control over the final reproduction.) If the image is printed correctly, the top of the chess piece will blend into the white background; the histogram readings are nearly the same in both areas. Alternately, if the image is printed darker than anticipated, the chess piece will no longer blend into the background, but the object will not look “white”; it will appear gray, which is not its actual attribute.

Let's look at how we can create a better image. A flat, non-reflective white subject such as this chess piece requires a soft source of illumination. The main light source for [plate 6-51](#) was a large softbox placed above and slightly behind the subject. The background appears as a light shade of gray because the softbox was feathered away from it, reducing the exposure on the background. To reduce the exposure on the top of the subject, a small net dot on a C-stand was positioned above the subject, cutting the intensity of the exposure only on the top of the chess piece. If you compare this photo with [plate 6-50](#), you can see that the top of the subject no longer blends with the background.

In [plate 6-51](#) (previous page), the main light was feathered away from the background, which left the front of the chess piece darker than was required to show its shape and form. For [plate 6-52](#), a fill card was added at camera right, opening up the shadows nicely. The slight fill from this card helped bring out the shape of the subject.



PLATE 6-53. The final lighting setup.

Plate 6-53 shows the final lighting setup. A net finger (**A**) was placed to camera left, which reduced the intensity of the main light. A small net dot (**B**) was placed above the chess piece to reduce the exposure of the main light that separated the top of the subject from the background. The main light source was a large softbox (**C**). A carefully placed white card (**D**) was used to add reflected/bounced fill to the left side of the chess piece. A second white card (**E**) was placed to camera left, creating added separation and shape on the right side of the chess piece. After looking at the final image, I would have cut the light on this card slightly; the highlight is a little too hot. I could have darkened it in postproduction—but this is a book on lighting, not Photoshop.



PLATES 6-54 AND 6-55. If viewed alone, the before image (left) might be acceptable to a client without a discerning eye. However, when placed side by side with the final image (right) the differences between the two photographs become very evident. Just a little extra tender loving care at the time of capture will pay off in repeat business and additional clients.

Case Study 11: Shoes on a White Background

PRODUCT: Field-hockey shoes

DIRECTIVE: Photograph the shoes on a clean white background for use on a web site

I was commissioned to photograph products for a field-hockey company's online store. The client requested a white background and a realistic depiction of the shoes' attributes.

Flat lighting a product on a white background will not enhance its look—or its sales. I have often heard people say, “It's only for a web site—it doesn't have to look good.” In fact, when a product is placed online it is *more* important to show every characteristic of the subject. Many people who order items online are not equipped with calibrated monitors, so the photograph must convey the product's attributes in their entirety.

For this assignment ([plate 6-55](#)), that meant the lighting had to show the protruding tread on the sole, as well as the silver (with black breathable fabric) at the top of the toe area.

Flat lighting a product on a white background will not enhance its look—or its sales.

How It Was Done. Plate 6-56 is well-exposed, though flatly lit. Unfortunately, you can't see many of the different fabric textures and characteristics of the shoe. There are burned-out highlights as well as blocked-up shadows. If I saw this photo online I would probably perceive the shoes to be black, red, and white—when, in reality, they are black, red, and silver. Can you see why lighting products is critical for your clients?



PLATE 6-55. The final image. (ISO 200; 80mm lens; f/14; 1/100 second)



PLATE 6-56. This flat exposure doesn't do the shoe justice—or help the viewer decide to buy it. (ISO 200; 80mm lens; f/14; 1/100 second)



PLATE 6-57. The tools needed to shape this product.

Can you see why lighting products is critical for your clients?

In **plate 6-57** you can see the auxiliary tools that were necessary to shape this image. The black finger blocked the reflected light from the white surface to help shape the metallic silver trim and “D” logo on the shoe and the back sole of the product.

Plate 6-58 (next page) shows the final setup used to create **plate 6-55**. Let’s take a look at the diagram. A single monolight (**A**) with a 7-inch parabolic reflector was positioned high and angled down onto the back shoe as a hard source to show texture and depth on the treads. A double net cutter (**B**) was placed just in front of the monolight so that no additional light would fall onto the front of the shoe or the white surface. This would have added unwanted bounce light on the product. A second monolight with barn doors (**C**) was aimed at the white seamless paper to illuminate the background. (*Note:* To obtain a white background, the background exposure must be at least 1 stop brighter than the subject.) A 7-inch parabolic (**D**) was directed toward the background, metering about 1 stop brighter than the main light, ensuring a white background. A small stripbox (**E**) was placed to camera right as the main source of illumination on the product. Notice that this light was not on the camera axis, which would have produced flat lighting. It was placed at approximately a 90 degree angle to the product to create shadows and highlights and enhance the texture of the shoes’ black fabric. A small mirror (**F**) was used as an accent light, bouncing a highlight onto the silver fabric of the shoe. Another small mirror (**G**) was placed to add a highlight to the tip of one shoe and the logo on the back of the other. Remember that clients want to see their logo as clearly as possible, so don’t allow any highlight or shadow to run through any part of it.



PLATE 6-58. The final lighting setup.



PLATES 6-59 AND 5-60. Viewing the bad (left) with the good (right) gives you an idea of how a few small adjustments can enhance the overall image and show all the product's realistic attributes.

Case Study 12: Decorative Mirror

PRODUCT: Decorative mirror

DIRECTIVE: Photograph a dressing table setting with reflections in the mirror

When I started photographing for a national catalog company, I learned so many helpful techniques. In particular, expert product photographer Casey Chinn taught me how to make a mirror look like a mirror—and how to place a pleasing reflection in it. We're not going to do this with Photoshop

(that's too easy); we're going to create a realistic reflection in the mirror at the time of capture. Suppose you were asked to photograph many different mirrors for a client. Placing all those reflections in postproduction would be quite time-consuming.

We're going to create a realistic reflection in the mirror at the time of capture.



PLATE 6-61. The final image. (ISO 200; 105mm lens; f/14; 1/125 second)

How It Was Done. In [plate 6-62](#), there's not much to say about the mirror. The frame is well lit, but one could reasonably interpret this product as a picture frame rather than a mirror.



PLATE 6-62. The frame is well-lit, but the mirror doesn't really look like a mirror. (ISO 200; 105mm lens; f/14; 1/125 second)

As we look at [plate 6-63](#), we see a photo placed to create a reflection on the surface of the mirror. The reflected image is of a beautiful landscape (by Scott Stevens), which doesn't seem like a reflection that would actually appear if this mirror were set up on a dressing-room vanity. This underscores an important point: the type of photo you choose to reflect in your mirror must be believable!



PLATE 6-63. The reflected scene reveals that this is a mirror—but the nature of the scene doesn't make sense with the surrounding set. (ISO 200; 105mm lens; f/14; 1/125 second)



PLATE 6-64. The reflected image of the bedroom is more realistic, although it's still not lit well. (ISO 200; 105mm lens; $f/14$; 1/125 second)



PLATE 6-65. To avoid competing with the product, the reflected image should be printed out of focus. (ISO 200; 105mm lens; $f/14$; 1/125 second)

For a more believable reflection, in [plate 6-64](#) I used an image of a bedroom (also by Scott Stevens). The image is reflected in the mirror, but it's poorly lit. We'll look at how to light the reflection in the final set scene.



PLATE 6-66. The final lighting setup.

If your client desires a believable reflection for their mirrored product, the image must be printed out of focus so that it does not compete with the product. Had the reflection in [plate 6-65](#) been sharp, the mirror would likely be misconstrued by viewers as a picture frame.

In [plate 6-66](#) we see the lighting setup used for [plates 6-61](#) and [6-65](#). The only difference is the reflection chosen for the final product shot. Our subject is a flat-black mirror with many curves. Our main source of light was a monolight with a softbox (A). A monolight with a 12-inch parabolic reflector (B) was used as the source of illumination on the photograph being reflected into the mirror. Barn doors are essential to control the direction of this light, keeping unwanted light from contaminating the set. The arrow shows the placement of the reflected picture that shows in the mirror. (Note: To obtain a gradient reflection in the mirror, as seen in [plate 6-61](#), you would replace the out-of-focus photo with a solid white card. Additionally, the placement of the light (B) would need to be lower. You'd add a snoot, rather than barn doors, and feather the light up to the white

card to create a gradient reflection. You could also get creative and place a colored gel over the light to spice up the reflection.

A large assortment of silver cards (C) was strategically positioned to create specular highlights on the matte surface of the mirror frame. (Had the mirror frame featured a shiny finish, white cards would have been used for softer highlights.) A hard light (D) was placed behind the subject to create distinct separation from the background as well as the strong directional shadows at the base of the mirror. A small, square accent mirror (E) highlighted the perfume prop. A heavy accessory tool (F) helped hold the background in place. A large silver reflector (G) added the necessary specular highlights on the right side of the product frame and on the front of the product.



PLATES 6-67, 6-68, AND 6-69. Placing the images side by side reveals a vast difference between them. The before photo (above right) shows a dull, lifeless, unidentifiable product of some sort. The final two images (below, left and right)_are two different and pleasing examples of how to create depth and interest in the reflection of the beautiful mirror.



PLATE 6-70. The final image. (ISO 200; 105mm lens; f/18; 1/125 second)

Case Study 13: Shooting with a Light Tent

PRODUCT: Shiny metal loon

DIRECTIVE: Photograph a metal loon sculpture, showing its shape

A product like this metal loon figurine is difficult to shoot—even inside a light tent.

By now, this thought has probably crossed your mind: Why learn all these lighting techniques when you can simply place a product in a light tent and

get soft wrap-around lighting? That's certainly one approach to photographing products—although it's not the ideal solution. When used incorrectly, light tents can produce flat lighting that does not show a product's shape, form, or attributes. The best way to differentiate yourself from the thousands of picture-takers out there is by taking your work to the next level—by educating yourself about lighting and its practical applications. I highly recommend practicing all the techniques illustrated thus far before you go out and commit to shooting products for profit. I also suggest investing in a Lasolite light tent, which is completely free of seams (see ornament example on [page 64](#)). It will help you capture a cleaner image, free of distracting reflections.

For this case study, let's look at how to use a light tent effectively. A product like this metal loon figurine is difficult to shoot—even inside a light tent. **Plate 6-70** shows our objective; the viewer can see the shape of the loon and see that it is metal. The careful placement of lights and tools, both outside and inside the tent, was critical to the creation of this shot.

Plate 6-71 was shot inside a light tent with two monolights flanking the outside of the tent. The light from the tent's diffusion material produced a flat lighting effect that revealed nothing about the shape or depth of the subject. The color of the loon also appears to be white. (Remember: Shiny metal subjects are highly reflective and mirror their surroundings.)

Plate 6-72 was created with a single light outside the tent. This produced an unacceptable direct reflection of the tent. (Can you see the unwanted reflection on the product?) Although it is poorly lit, the loon now appears to be metal.

Plate 6-73 shows the exterior setup. With the product in the light tent, I decided to use a piece of suede-textured fabric for the background and surface. I wanted to keep the fabric as non-reflective as possible so that extraneous reflections would not become distracting on the subject. My main light source was a monolight with a softbox (**A**). My second light was a hard light source with barn doors (**B**) to control the field of light. This lit

the background and created texture on the folds of the fabric. An additional piece of rip-stop nylon material was placed over the front of the light cube to eliminate any unwanted reflections from my studio (C). A small white silk dot (D) was precisely placed on top to reduce the amount of direct reflection produced by the main light. Notice there are no hot spots on the product. The final image is not complete with this setup.

When shooting products in a tent you will always have to bring the studio *inside* the tent. **Plate 6-74** shows the interior lighting tent setup. A small white silk finger (A) was placed inside the tent and positioned to produce a pleasing and believable reflection on the tail of the loon. Notice the wrinkles on the wall of the tent (B); you don't want these to be reflected onto your shiny subject. A narrow, solid-black finger (C) was used to create believable shadowing on the subject. Keep in mind that you can make your own fingers with armature wire and black felt.



PLATE 6-71. With two lights flanking the outside of the tent, the light is flat. (ISO 200; 65mm lens; f/16; 1/125 second)



PLATE 6-72. With one light outside the tent, the loon is still poorly lit—but it's now clearly made of metal. (ISO 200; 65mm lens; f/16; 1/125 second)



PLATE 6-73. The lighting setup outside the light tent.

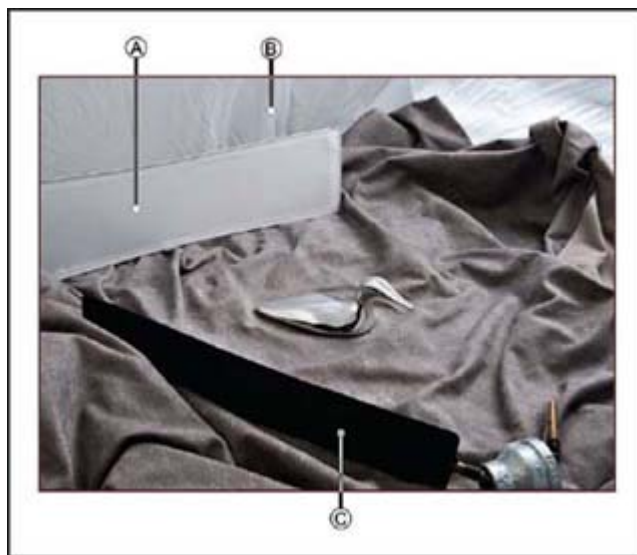


PLATE 6-74. The lighting setup inside the light tent.



PLATES 6-75 AND 6-76. Before (below, left) and after (below, right). A light tent is a great tool—but only when it is used in conjunction with the other lighting principles that have been demonstrated throughout this book.

Case Study 14: Vodka Bottle with Hot Shoe Flash

PRODUCT: Organic Vodka 14 (Boulder, CO)

DIRECTIVE: Create a beauty shot of Vodka 14

For this beauty shot of Organic Vodka 14, I decided on a look that portrayed class and elegance. Using the principles taught throughout this book, I employed the classic white-line technique (case study 6) coupled with the black-glass technique (case study 9). If you look back at the lighting setups for these images, you can see the techniques implemented in this photograph.

If you understand the principles of studio lighting, you can make great images with any lighting tool.



PLATE 6-74. The final image. (ISO 400; 40mm lens; f/9; 1/60 second)

I have heard many of my students comment, “You have professional studio strobes, but all I have are small hot-shoe flashes.” I am telling you right now that it doesn’t matter. If you understand the principles of studio lighting, you can make great images with any lighting tool. To prove this point to my students, I created [plate 6-74](#) using two Nikon SB800 Speedlights. Each light’s output was modified using a Rogue grid and Rogue creative gels. LumiQuest also makes amazing small-flash modifiers (from softboxes to snoots) that work beautifully for small product photography.

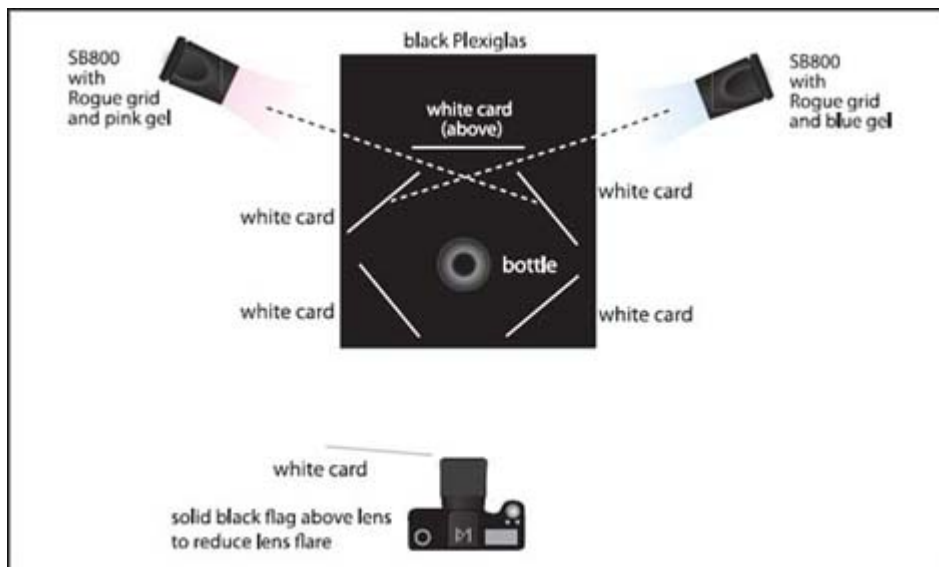


PLATE 6-75. The final lighting setup.

Plate 6-75 shows the lighting setup used to create this image. I didn’t have any barn doors for the Nikon SB800 hot-shoe flash units, but that turned out to be a happy accident. The unblocked light created the pleasing color on the base of the black glass behind the bottle. I didn’t intend to use this shot for the book, so I forgot to dust off the glass. As a result, there was a lot of dust on the black glass that took a long time to retouch. Additionally, I had the white cards close to the product, so I had to extend the background in postproduction, just as I did for the martini glass case studies.

Case Study 15: Lipstick with Hot Shoe Flash

PRODUCT: Shiny metal lipstick case

PHOTOGRAPHER: Mike Corrado

DIRECTIVE: Personal project using Nikon D3X

I saw [plate 6-76](#) at a Nikon presentation Mike Corrado gave at PhotoPlus Expo and asked him about his technique. I was quite impressed when he told me he created this image using only hot-shoe flashes. Mike graciously allowed me to use this amazing photo as additional proof that knowledge of lighting principles and placement can be applied with small flash units used off camera. As you can see in [plate 6-77](#), the final look was created using a Nikon D3X camera and Nikon SB900 Speedlights.



PLATE 6-76. The final image. (ISO 100; 105mm lens; f/14; 1/100 second) Photograph by Mike Corrado.

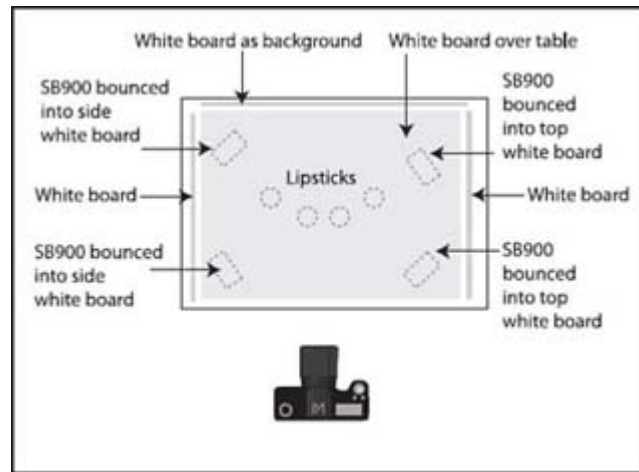


PLATE 6-77. The final lighting setup.

7. Putting It All Together

So far, we've focused primarily on techniques used to light single products. If you have practiced these approaches (and, most importantly, learned the principles associated with them) you will be prepared for the next step: creating shots that include products, props, backgrounds, and supporting surfaces. In the following setups, all the subjects will have to be individually lit—but when you light one item, that light may interfere with the lighting on other items on the same set.

I suggest arranging your set to the desired final composition, then placing your lights.

This last section of the book addresses these issues—the challenges you'll encounter when you have many different objects on set and need to compose the shot based on an art directors' composite sketch, then light the entire set.

The degree of difficulty may seem daunting, but don't get overwhelmed. You'll be able to create these complicated lighting situations if you study each light and how it affects all the objects on the set. Again, I suggest tethering your camera to a larger display so that you can see your image as it evolves. This is always better than evaluating it on your camera's small LCD screen.

As a general approach, I suggest arranging your set to the desired final composition, then placing your lights from the back of the scene to the front. Just as in portrait photography, you should typically place your background light first, then your hair light, and work in a clockwise or

counterclockwise direction. By practicing this formula, you will be able to see what effect (if any) each light has on your product(s).

In the following case studies, I have dissected the final photos to show the most important differences each light creates. I have demonstrated as many lighting principles and techniques as possible in each of these setups, reflecting the real-world applications of these techniques when shooting for actual clients. Each setup presents lighting problems that must be solved onset, typically in front of the client or art director.

Case Study 16: Lighting Multiple Products

PRODUCT: Antique tea service

DIRECTIVE: Work with the art director's mock page layout and directions

For this scenario, the art director gave me a detailed page layout...

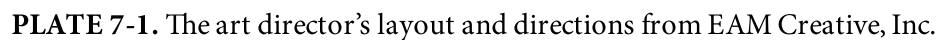




PLATE 7-2. The photograph according to the art director's vision. (ISO 125; 120mm lens; f/14; 1/20 second) [Note: There is no photographic reason my shutter speed was set to 1/20 second, as this photograph was lit with studio strobes. Perhaps I need to pay closer attention; I must have accidentally moved my shutter speed.]

The Solution. Finding the props was quite the feat, as there was a strict budget for this shot. The surface was found at a second-hand, do-it-yourself facility and the chair was purchased from a thrift store. I knew the main light would be a soft source, since the subjects' surface efficiencies were low. Therefore, the greatest challenge in this shot was to light the chrome chair so it recorded as shiny chrome.

Plate 7-3 (next page) shows the final lighting setup for **plate 7-2**, captured in-camera via Capture One Pro software. The main light, a softbox (A), was placed high and to the left side of the set to create shadows and form on the round subjects. Velum (B) was used to create the highlight reflections on the chrome chair. As seen in the before and after photos (**plates 7-4** and **7-5**) had I not used the Velum, the highly reflective chrome chair would have mirrored the dark surroundings and appeared to be a black chair. To block some of the main light from hitting the light-colored cookies, I placed a medium round net dot (C) on the velum. (I could have burned the cookies down in postproduction—but, again, that's not the point of this book!) An Advantage Gripware 18-inch double net (D) was

used to reduce the amount of light illuminating the spoon in the black sugar bowl. This also helped bring out the engraving on the spoon by reflecting portions of the black net. A mirror (E) was positioned to highlight the sugar on the cookies and raspberries. A soft light source (F) illuminated the background and added a slight backlight to the set for additional separation. A mirror (G) was added for an accent on the sugar cubes and a highlight on the front of the black plate. A white card (H) was positioned to fill the shadows on the set, but most importantly to add further white reflections to the chrome chair. A second white card (not shown) was placed on the seat of the chair and directed toward the chrome back to create additional white reflections on the metal. Finally, a snoot (I) was used to create texture on the fabric napkins.



PLATE 7-3. The final lighting setup.



PLATE 7-4 AND 7-5. Before and after shots of the chrome chair.

Case Study 17: Multiple Products on Black

PRODUCTS: Mirror and textured box

DIRECTIVE: Photograph reflective, textured subjects on black glass

The following case study combines many different surface textures that must be clearly defined in the final photo. The inclusion of a mirror and the use of black glass required additional problem-solving to ensure separation of the products and background.

The inclusion of a mirror and the use of black glass required additional problem-solving.

Plate 7-6 was created all in-camera. After the set was torn down, however, I realized there was a distracting intersection (akin to a tangent, as discussed in [chapter 5](#)) at the left side of the mirror and decorative box. This is bothersome at best. Although the tangent is a big flaw that should not be present in any photograph, the client and I decided a re-shoot was not necessary, given that this image took nearly four hours to light, from start to finish.



PLATE 7-6. The final image. (ISO 200; 105mm lens; f/10; 1/100 second)

The Problem. Any product shot on black glass or black Plexiglas presents a high degree of difficulty, as stated in case study 6. When coupled with a mirror that needs to be well-defined, as in case study 12, the difficulty is greatly magnified.

The Solution. Once a pleasing composition was in place, I lit each product individually, working clockwise and back to front. The thing I kept at the forefront of my mind was the shiny black surface and background. I knew I had to place all the lights to avoid creating reflections on it. I ended up using five lights—many of which had directional snoots to prevent undesirable cross-contamination of light.

Once a pleasing composition was in place, I lit each product individually...

Plate 7-7 shows the final lighting setup. My main light was a softbox (A) that separated the decorative box from the background while adding

shape, texture, and form to the top of the box, fan, and top of the mirror. For further separation, a 1200Ws monolight (**B**) was placed to produce a direct reflection on the background. This was fitted with a warm amber gel to complement the product colors. (*Note: I could have used the same lighting technique presented in the previous case study with a vase on black glass, but my studio ceilings are not high enough to create the proper incident angle I needed for this shot.*) I added a fill card (**C**) to reflect light back onto the fan, which was eventually cropped out. A small snoot (**D**) was placed at a low angle to illuminate the metal portion of the jewelry, capturing its texture. A Hensel snoot with an interior grid (**E**) added fill to the front of the box. Another Hensel snoot (**F**) was aimed at a large white card and feathered to create the graduated reflection in the mirror. You can never have enough A-clamps (**G**); look for them at your local hardware store. I used about half a dozen of them on this set alone! The final addition to the lighting setup was a couple of fill cards (**H**) to add separation between the products and the background.



PLATE 7-7. The final lighting setup.

Sculpting with Light[®] Sequence

Plates 7-8 through 7-10 illustrate the effect that each light has on creating the final image.



PLATE 7-8. Using a single light source did not create separation between the multiple products. (ISO 200; 105mm; f/10; 1/100 second)



PLATE 7-9. Adding an amber gel to the background created a warm feeling in the image and separation of the product and background. (ISO 200; 105mm; f/10; 1/100 second)



PLATE 7-10. Several point light sources were used to show the texture of each product. (ISO 200; 105mm; f/10; 1/100 second)



PLATES 7-11 AND 7-12. Looking at these before and after images, you can see how using the techniques presented will add dimension and texture to your products and final photograph.

Case Study 18: Simulated Sunlight with One Light

PRODUCT: chili peppers

DIRECTIVE: Self-assignment to simulate sunlight

My chili pepper shot ([plate 7-10](#)) was created as a self-assignment for this book. It was created using one light source, coupled with strategically placed mirrors, cards, and reflectors.

The Problem. I find sunlight to be a great source of illumination—although the Colorado weather often fails to cooperate with my schedule, making a location shoot unfeasible. For these situations, let's look at how we can create a studio image that looks as if it were lit by warm afternoon sunlight.

The Solution. There are several ways to simulate sunlight in the studio. I could have used tungsten-balanced lights with my camera at a daylight white balance, giving the set a yellow glow. I chose, instead, to use a strobe with a warming gel as the main light. This was a hard light source, simulating the look of the light at sunset. (*Note: For a moist look on the peppers, I treated them with a mixture of water and glycerin.*)

Let's look at how we can create a studio image that looks as if it were lit by warm afternoon sunlight.



PLATE 7-10. The final image. (ISO 200; 200mm lens; f/11; 1/125 second)

As seen in [plate 7-16](#) (page 126), the main light was a parabolic with barn doors and an amber gel (A). The barn doors helped to direct the hard light, preventing unwanted light from contaminating the set. I placed the light far from the subject to make the effect even harder. White background

paper (**B**) was placed to the subject's left to add fill to areas on that side of the set. Mirrors (**C**) were used for separation between the truck and the background. The mirror to the right created the light inside the bed of the truck. A white card with an amber gel (**D**) added the warm light on the front of the truck. To add the specular highlights to the chili peppers, I placed a mirror off set (just out of frame at **E**). A silver fill card (**F**) was placed just behind the product to enhance the reflection of the foiled words on the vintage truck. Finally, a home-made cookie (**G**) made from white foam-core board was positioned between the main light and the subject to create a dappled sunlight pattern on the supporting surface. The highlights and shadows from the cookie added depth to the final image. Additionally, I chose a longer focal length zoom setting to compress the image and blur the background, making the pepper the focus of the shot.

Sculpting with Light[®] Sequence

Though the differences between each image may be slight ([plates 7-11](#) through [7-14](#)), hopefully you can appreciate the importance of adding even subtle highlights using mirrors.



PLATE 7-11. This is the first image of the sequence. The highlights on the peppers are harsh and the inside of the truck is black with no detail. (ISO 200; 200mm lens; f/14; 1/125 second)



PLATE 7-12. Mirrors were strategically placed to illuminate the inside of the truck. (ISO 200; 200mm lens; f/14; 1/125 second)



PLATE 7-13. A fill card with an amber gel provided warmth to the front of the truck. (ISO 200; 200mm lens; f/14; 1/125 second)



PLATE 7-14. A small reflector positioned to camera left added just enough reflection to the gold-foiled words on the truck. (ISO 200; 200mm lens; f/14; 1/125 second)

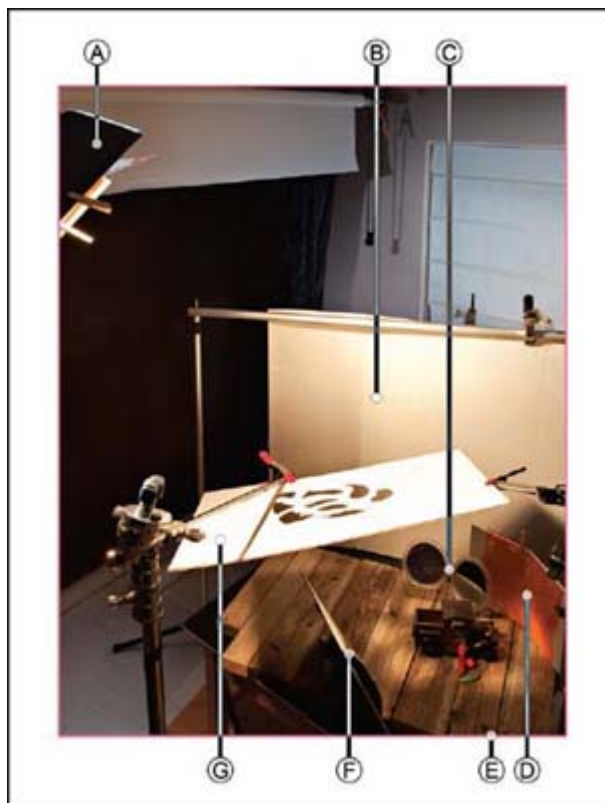


PLATE 7-15. The final lighting setup.

To add the specular highlights to the chili peppers, I placed a mirror off set...

The highlights and shadows from the cookie added depth to the final image.



PLATES 7-16 AND 7-17. The before photograph (top) was created with the same light source, but without a gel or any further reflected light from mirrors and fill cards. Viewing these two very different images clearly illustrates how a little knowledge of lighting principles and a pre-visualization of the final product can turn an ordinary image into a work of art.

Case Study 19: Gold Leaf Wine Bottle Label

PRODUCT: Wine bottle label

CLIENT: EAM creative, Inc.

DIRECTIVE: Highlight the gold foil logo and match the sketch provided by the design firm

I was commissioned to photograph a bottle label for EAM Creative, Inc., the company that designed the logo for a local wine maker. The photograph was for their web site, as an example of their graphic design capabilities. Additionally, my client wanted the final shot to closely match a sketch they provided ([plate 7-18](#)).



PLATE 7-18. The designer's drawing of the desired composition for the final photograph. Illustration by Elizabeth A. Mitkish.



PLATE 7-19. The final photograph presented to the client—which, incidentally, won the client two silver Addy awards (ISO 200; 155mm lens; f/5.6; 1/200 second)

The Problem. In our initial conversation about creating an image of the logo, the graphic designer and I had no idea the wine maker planned to render the logo in gold leaf; we were expecting a paper label. When we received the wine bottles my jaw dropped—not just for its beauty, but also because of the increased degree of difficulty I’d face in photographing the gold leaf logo on a shiny black bottle. Due to this degree of difficulty, I asked my friend Will Jones, an Art Center grad, to help with this shot.

The Solution. Luckily, I was given creative freedom in choosing the surface and background for this product. I selected a non-reflective background and an elegant gold runner that resulted in a somewhat easier lighting setup than a typical black-on-black shot (such as we saw in case study 9). My main focus was the bottles, which I knew I would illuminate using reflected lighting techniques.



PLATE 7-20. The final lighting setup.

Plate 7-20 shows the final lighting setup. (As noted, I used my preferred tethered setup [H] for this assignment.) For reflections to shape the bottles, I placed a large strip softbox (A) as the main source of illumination from the camera left side of the set. An additional scrim (B) was used to broaden the highlighted reflections on the wine glass and bottles. A small softbox (C) was placed behind the set to highlight the top of the bottles and separate the subject from the background. A snoot (D) provided the hard backlighting on the grapes, plate, and wine. To control the size of the highlight on the subject's right side, a white nylon scrim (E) was placed between the subject and the fourth light (G). A black felt cloth was placed over half of the white scrim to reduce the size of the highlight on the bottles and ensure no additional light would contaminate the front of the bottles. White Trans-Lum (I), a velum-type material, was used to create the white highlight and fill on the front of the main bottle. Had this fill not been present, the front of the bottle and the name of the wine would not have been visible. A small, solid-black finger (J) blocked the direct specular highlight from the light illuminating the label. A monolight with barn doors (K) was used to concentrate the light onto the gold foil

logo. Not shown are a couple of mirrors strategically held to accentuate the grapes and the cheese (that were, incidentally, cropped from the final image).

I selected a non-reflective background and an elegant gold runner ...

Sculpting with Light® Sequence

Plates 7-21 through **7-23** illustrate, in progression, the effect that the different lighting elements have on creating the final image.



PLATE 7-21. The initial composition was set up per the art director's request, using a reflected light technique to show the shape of the bottle. (ISO 200; 135mm lens; f/5.6; 1/160 second)



PLATE 7-22. A second reflected source was placed to illuminate the left side of the bottles. Additionally, a harder light source was directed toward the logo. (ISO 200; 135mm lens; f/5.6; 1/160 second)



PLATE 7-23. With all the elements in place, the photograph closely resembles the sketch provided by the art director. However, I still felt the background required an additional light to create more depth, as seen in [plate 7-25](#). (ISO 200; 135mm lens; f/5.6; 1/160 second)



PLATES 7-24. An example of how *not* to light a scene like this.

Plate 7-24 shows how some photographers might approach lighting this product, using Photoshop to retouch out the softbox reflections and produce a well-exposed image that is “good enough” for a web site. Picture the image with the highlights removed, though—the bottles and glass would not have any shape or form. The result would be amateurish at best! **Plate 7-25** illustrates how a little tender loving care and problem-solving will create a much more beautiful image and ensure repeat business.



PLATE 7-25. A much more professional approach to the lighting.

Case Study 20: Computer Station

PRODUCT: Computer station with dual monitors

DIRECTIVE: Capture the products and screens in one exposure

PHOTOGRAPHER: Don Jones



PLATE 7-26. Here we have a computer setup captured in one shot. (ISO 100; 70mm lens; f/8; 1/60 second) Photograph by Don Jones.



PLATE 7-27. The image without the screens illuminated. Photograph by Don Jones.

The Problem. Commercial photographers are often asked to create images of computers, televisions, and other electronics. The challenge is to expose for the computer screen and the product itself in a single shot. This will involve the same principles we covered in case study 3; the only variable will be the brightness of the screens.

Choose a slow enough speed that will allow the light to register at the desired exposure.

The Solution. Because computer screens emit continuous light, the exposure and density is controlled using the shutter speed; just choose a slow enough speed that will allow the light to register at the desired exposure. With the studio's overhead lights off and the modeling lights on the strobes turned off, the studio will be dark, so no additional continuous light sources will affect the exposure on the final image.

Plate 7-28 shows the final lighting setup. (In this shot, the computer screens are overexposed because the room lights had to be turned on to see the placement of the lights.) A strobe with a 7-inch parabolic and warming gel (**A**) illuminated the background, giving a nice hard edge and coloration. The main light on the product was a softbox (**B**) placed high and above the computer, separating the products from the background and lighting the top of the table. Placing the light at this position ensured that no unwanted reflections would appear on the faces of the computer screens. Large white cards on wheels (**C**, **E**) were positioned facing the subject for fill. A small, solid-black flag (**D**) was placed above the camera to ensure there would be no lens flare from the main light.



PLATE 7-28. The final lighting setup. Photograph by Don Jones.

Case Study 21: Engraved Labels

PRODUCT: Engraved metal liquor-bottle tags

DIRECTIVE: Photograph a bottle and glass on a set that complemented the stainless steel tags

Working for Lillian Vernon, Inc. was one of the most fulfilling and educational experiences in my photographic career. I was amazed at the complexity and collaboration that goes into a single product shot. There are so many behind the scenes “tricks”—like building a mock set, designing believable propping to tell the story of the product, and creating a liquid mixture that looks like whiskey (Who would have thought that real whiskey doesn’t photograph well?). Next, you will learn some of the tricks I learned, tips that will help you create beautiful images.

Who would have thought that real whiskey doesn’t photograph well?



PLATE 7-29. The final image. (ISO 320; 82mm lens; f/9; 1/125 second)

Sculpting with Light[®] Sequence

Plates 7-30 through 7-32 illustrate, in progression, the effect that the different lighting elements had on creating the final image.



PLATE 7-30. With the composition set, I prefer to light from the back to the front of the set, as shown in this backlit photo. (ISO 320; 78mm lens; f/9; 1/125 second)



PLATE 7-31. A soft main light was placed behind and close to the objects for wrap-around lighting that extended onto the background. (ISO 320; 78mm lens; f/9; 1/125 second)



PLATE 7-32. Additional lights and reflectors were placed, adding further light to the liquid. (ISO 320; 78mm lens; f/9; 1/125 second)

Starting from the back of the set, I worked my way forward as I set up the lighting.

The Problem. My objective was to build a set, using materials I had on hand, that would complement the engraved metal liquor-bottle labels. This included selecting appropriate props.

The Solution. To show the labels in use, I chose a bottle I had in storage. I visualized showing liquid in the shiny glass bottle, which meant I would have to pair backlighting and reflected-light techniques. Starting from the back of the set, I worked my way forward as I set up the lighting.

Plate 7-33 (next page) shows the final lighting setup. A single light with a snoot (A) was placed high above the set to ensure that no unwanted reflections appeared on the objects. In addition to illuminating the bottle and glass, this light source lit the background to show depth. A softbox (B) was placed behind the set to add further separation between the product, props, and background. A monolight with a narrow snoot (C) was positioned behind the products, beyond the angle of incidence to the lens, adding light on the props and liquid. A round mirror (D) reflected highlights onto the liquid in the bottle. (Incidentally, the “whiskey” is actually water and browning seasoning.)



PLATE 7-33. The final lighting setup.

When photographing transparent glass, you need to show its shape and form with pleasing specular highlights.



PLATES 7-34 AND 7-35. Before (left) and after (right).

When photographing transparent glass, you need to show its shape and form with pleasing specular highlights. A single white card (E) was placed to fill in the shadows and add a reflection on the bottle, enhancing its shape and form. A mirror (F) was held up during capture to create specular highlights on the engraved metal labels.

So far, the scene was primarily backlit. To add fill to the front, a large white card (G) was used. Strategically and precisely placed, this fill card added reflections to the metal labels. An additional fill card (H) created pleasing highlights on the label attached to the whiskey bottle itself. Finally, a large Chimera strip light (I) was placed close to the set for an overall level of fill light.

Plates 7-34 and **7-35** show the difference the additional lighting, bounce cards, and mirrors made in the final image. The products possess a mirror-like quality and they reflect the dark studio. Keep in mind that you are the lighting “chef” and you have the ability to spice your images up or down to taste. I added a couple of black fingers to the reflections on the three metal products that appear in the foreground—just to further spice up the engraved labels.

Case Study 22: Mixed Textures

PRODUCT: Silver, china, and other props

DIRECTIVE: Accent every element within the composition

As you’ve seen throughout this book, product photography is an exercise in problem-solving. By applying some basic lighting principles, you can find solutions to light every composition desired by your client. This is where the art of lighting products comes into play. **Plate 7-36** was created to illustrate the fact that knowing the basic principles of light allows you to use it much more creatively.

The Problem. The difficulty with this image was the overhead composition that included round china, silver flatware, and textured

ornamental props.



PLATE 7-36. The final photograph. (ISO 200; 78mm lens; f/14; 1/160 second)

If you look carefully, you can see that the mirror is creating the separation between the background and the pears.

The Solution. The composition could not be changed (per the art director). Therefore, I had to come up with a way to light all elements in the shot—including the highly reflective silverware. I chose to use an overhead scrim together with cross top lighting that would guarantee a pleasing, evenly lit reflection on the silverware.

Plate 7-37 shows the lighting setup used for the final image. The main light was a single Hensel head (**A**) powered by a 1200W power pack. A large home-made scrim (**B**) made of rip-stop nylon and PVC piping was placed over the set to ensure even illumination of the reflective flatware. A second light source (**C**) was set to record the same exposure as the first light (**A**). These two lights were positioned to evenly light the scrim, creating (effectively) one large, soft light source. A third light (**D**), a harder source, was necessary to create depth in the final photograph. Space prohibited

placing this inside the provisional light tent, so square mirrors (E) were used to redirect the output from light D back into the set. If you look carefully, you can see that the mirror is creating the separation between the background and the plates. Two white cards were added for fill from the back of the light tent (F) and the front of the set (G). An additional mirror (H) reflected light from D back into the set, adding further separation and more highlights on the pears.

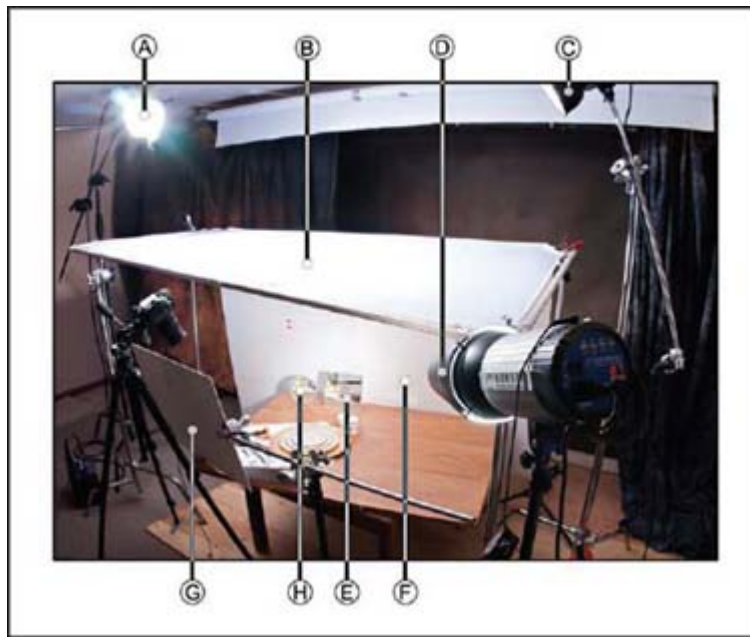


PLATE 7-37. The final lighting setup.

Sculpting with Light® Sequence

Plates 7-38 through 7-40 illustrate the lighting build for this image. You may not be able to see much difference between the images; the main changes are visible on the silverware.



PLATE 7-38. This is a good exposure, but the subjects are poorly lit. The silverware looks gray—there's no hint that they are shiny metal. (ISO 200; 78mm lens; f/14; 1/160 second)



PLATE 7-39. Adding a scrim for softer lighting improved the look of the silverware. (ISO 200; 78mm lens; f/14; 1/160 second)



PLATE 7-40. I love using mirrors to control where light strikes my subjects. Here you can see the addition of subtle but necessary separation in the background near the pears. (ISO 200; 78mm lens; f/14; 1/160 second)





PLATES 7-41 AND 7-42. Before (top) and after (bottom) the addition of a black card to create reflections on the silverware.

Adding even the slightest accent highlights and shadows to an image will make your product photographs go from flat and uninteresting ([plate 7-41](#)) to fabulous ([plate 7-42](#)). The last bit of spice I added to the final image was a strategically held black card that created an important black reflection on the silverware. Now the silver had shape and form. The exposure for both images was identical.

Case Study 23: Rolleiflex TLR

PRODUCT: Rolleiflex TLR

DIRECTIVE: Create a graphically pleasing composition of the camera and supporting props on a clean white background—while also capturing an accurate representation of the camera's many surface qualities

So far in this section, we've looked at combining multiple subjects, each with its own surface characteristics. In the case of this classic camera ([plate 7-43](#)), we have virtually every kind of surface represented on a single subject.



PLATE 7-43. The final photograph. (ISO 200; 105mm lens; f/5.6; 1/125 second)

The Problem. The camera, our subject, features multiple surface efficiencies on a single product—from shiny metal, to textured matte surfaces, to transparent glass on the viewfinder. It will require several different lighting techniques to show this product's true attributes.

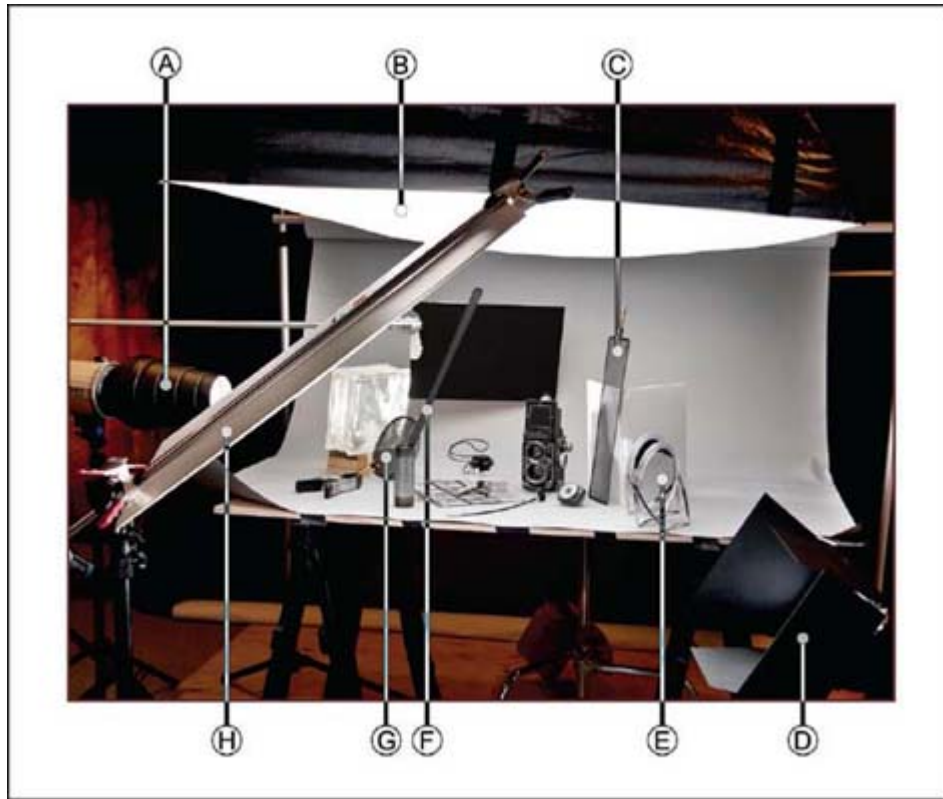


PLATE 7-44. The final lighting setup.

The Solution. A complex lighting setup was necessary to create shape and form, show texture, and produce sufficient separation. **Plate 7-44** shows the final lighting setup. Let's walk through it, step by step.

Starting from the back, a single monolight with a Hensel snoot (A) was aimed through a glass block for scattered highlights across the set. A large light box (B) was placed above the entire set; since a majority of the camera is brushed metal, a soft source was the ideal choice for the main light. A net finger (C) was placed in front of a white card to cut the amount of fill on the viewfinder of the camera. The white card provided a pleasing highlight on the semi-shiny black metal viewfinder. The third light, a single monolight with barn doors (D), lit the white card (H) that created the highlights in the lenses and other glass areas of the camera. A variety of mirrors (E) were placed to add highlights on the supporting vintage light meter and the dials on the side of the camera. A black felt flag on a yardstick (F) was strategically placed to add black reflections to the chrome

on the front of the camera. A small net dot (G) was placed to cut the exposure from light A, which was causing a hot spot on the proof sheet and the loupe. A white card attached to a C-stand by A-clamps (H) was the source of the reflection on the dual lenses. The black card seen behind the set was used to block some of the light on the negative sleeve; without it, the film would not have been visible under the diffused light.



PLATE 7-45. If you compare this image with the final image, you can see the retouching that was necessary to clean up this vintage camera.

A Time for Postproduction

This was one rare case where I wanted the camera to appear new and not vintage. In [plate 7-45](#), you can see the many defects and rust spots on the camera that needed to be removed in Photoshop.

The white card provided a pleasing highlight on the semi-shiny black metal viewfinder.



PLATES 7-46 AND 7-47. The before image (left) is a well-exposed but flatly lit image. It shows no depth or dimension and neglects to show the viewer the true product. The black on the viewfinder is also underlit and will render as black with no detail. In the final image (right), these issues are all addressed for a much more pleasing image.

Case Study 24: A Final Challenge

PRODUCT: Lexar products

DIRECTIVE: Create a black-on-black image with a shiny background, while highlighting metallic elements on the subjects

In my opinion, I saved the most challenging setup for last. I created this image to show how to light black products on black glass with additional foiled subjects.

I created this image to show how to light black products on black glass with additional foiled subjects.



PLATE 7-48. The final photograph of black-on-black Lexar products. When working with black glass, be sure to carefully dust the set and the black products. I've found that clean camel-hair makeup brushes work well. (ISO 320; 135mm lens; f/16; 1/125 second)

The Problem. Black glass coupled with black props and shiny foiled memory cards were the challenge here. Additionally, the background, surface, and supporting props were all black, so ample separation between the blacks was required to show where each product began and ended.

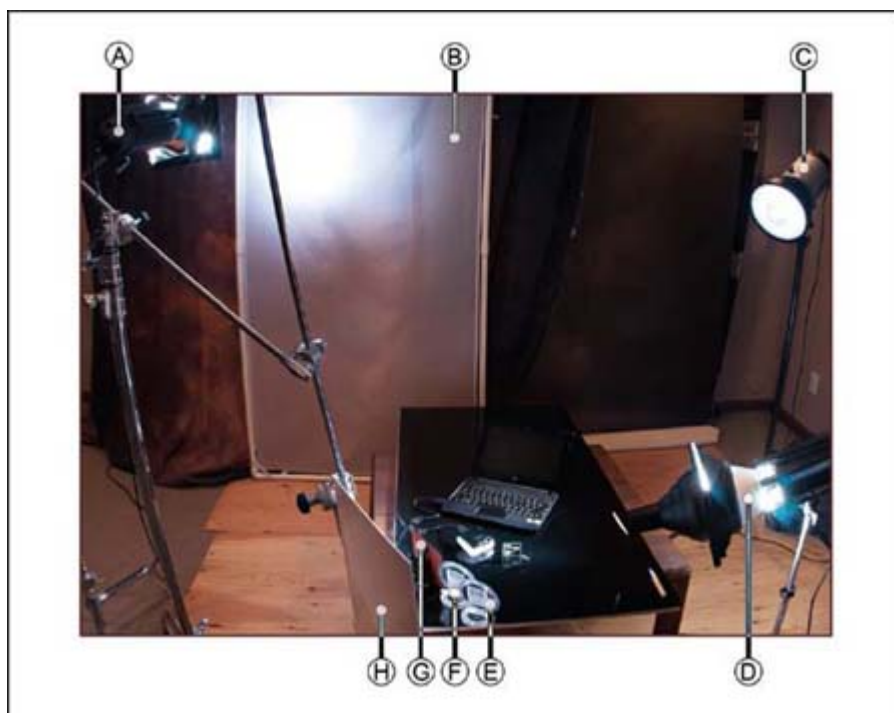


PLATE 7-49. The final lighting setup.

The Solution. To separate the black computer from the background and the surface, I added a soft reflection to the surface on which the products were resting. Additional highlights were added via reflected-light techniques. **Plate 7-49** shows the setup for the final image.

A single monolight (A) was placed high and behind the set (this light should be at least 1000W). This light was directed at a white scrim (B) that bounced a soft reflection onto the black glass surface. A 20 degree grid (C) was used for a sharp highlight and separation on the memory cards and keyboard. This light also added a highlight on the white part of the card reader. The third light used to illuminate this set was a 600W monolight with a narrow snoot (D); it highlighted the Lexar logo on the card reader. (*Note:* If you have a snoot with a wide opening, you can narrow it with Cinefoil.) A small mirror (E) was placed at an angle to add highlights to the front of the foil cards. A second mirror (F) was used to add specular highlights to the CompactFlash card. A large square mirror (G) was positioned to create additional specular reflections in the shadow area of

the card reader. Finally, a white card (H) was strategically positioned to create the highlight on the front of the computer, separating the black computer from the black surface.

Sculpting with Light[®] Sequence

Plates 7-50 and 7-51 show a very complex subject that required the use of many fill cards and strategically placed mirrors.



PLATE 7-50. This is how the photograph would look without the highlight on the black glass. White cards and reflectors were used to separate the black products from the black glass surface. (ISO 320; 135mm lens; f/16; 1/125 second)



PLATE 7-51. The addition of a reflection on the black glass added the third dimension the previous photo lacked. When you use this technique, you will always have to look at additional reflections that may appear in your image, such as on the logo of the card reader. (ISO 320; 135mm lens; f/16; 1/125 second)



PLATE 7-52 AND 7-53. Before and after. Comparing these images, you can see how important separation through lighting techniques is to a final photograph. The blacks in the before image do not record any detail and blend into the background.

Conclusion

I decided to conclude this book with a shot that balances two of my specialties: portrait lighting and product lighting. When an assignment comes your way allowing you to photograph a person *with* a product, the degree of difficulty multiplies, as the techniques for lighting each are very different (something you've seen throughout this book).



PLATE C-1. I created this promotional photograph for International Blues Challenge finalist Jeremy R. Vasquez. I found this an opportune time to challenge myself and create a combination product shot/portrait. We tried a few static shots that didn't work too well, so we decided I would photograph

him playing his guitar. It was quite a challenge as I had to light both Jeremy *and* the guitar. Jeremy had to follow my directions closely on the crucial placement of the guitar—one false move could have ruined the lighting on the product. To convey a “blues” feeling, I set my white balance to 3200k, making my 5500k studio strobes (on the model) record as blue. For the light on the guitar, a softbox was filtered back to tungsten (using a CTO filter). Strategically placed dots, fingers, and fill cards were positioned around the product to capture its shape and texture. Jeremy loved the final image—and a happy client becomes a repeat client. (ISO 200; 62mm lens; f/7.1; 1/80 second)

I am professionally trained as a commercial/industrial photographer, but in that type of work there are not too many chances to interact with people. I genuinely love people, so that was greatly missed. As a result, I started photographing portraits as my primary concentration later in my photographic career. However, while Sculpting with Light® for people was my passion, I’ve never wanted to rest on my laurels. I’m passionate about becoming better at my art. It was with that inquisitive mind-set that I dabbled in product photography from time to time.

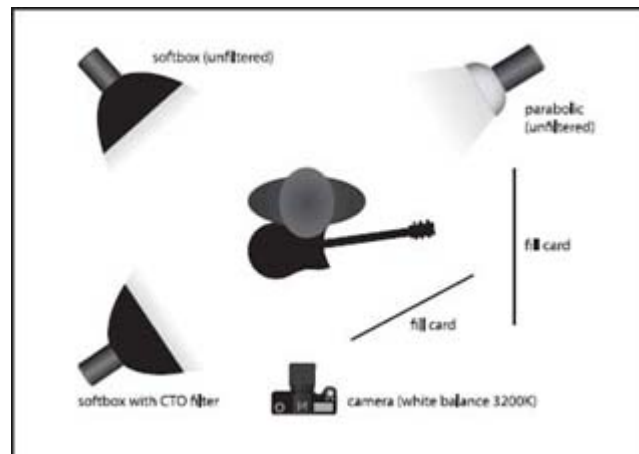


PLATE C-2. The lighting setup for plate C-1.

One year at PhotoPlus Expo in New York City, I asked a very well-known commercial photographer if he would look at my portfolio. My friends thought I was nuts—but I have always thought that if you don’t ask the question, you’ll never know the answer. So I asked this acclaimed photographer to look at my portfolio. The first thing he said was (and I quote), “Your product photography sucks.” I pointed out, “Well, I primarily specialize in photographing people.” He loved my lighting for people.

His advice and comments stuck with me for a few years—until I was offered a job photographing products at Current, Inc. I jumped at the opportunity to learn as much as I could about this specialty. The principles were quite different than those used in portrait photography, but I wanted to prove to myself that I could learn to light products—so my product photography *wouldn't* suck! I am proof that if you find your passion, study your art with others who are better than you (go to workshops, read books), and practice your craft, you can become the photographer who can honestly accept a job and know you will be able to create high-caliber images.

If you study the principles I have presented here, you can learn to light any object like a true professional.

I hope you can appreciate how subtle differences can make an image go from flat and amateurish to “wow” and professional. I am confident that if you study the principles I have presented here, you can learn to light any object like a true professional. If you practice and apply these principles and lessons, your images will come to life just as mine have. With knowledge you have power—power to create images that are works of art.

I hope the lessons in this book have inspired you to step up your game in the wonderful world of the photographic arts. Happy shooting!

Resources

Advantage Gripware www.advantagegrip.com
Avenger www.avenger-grip.com
Backdrop Outlet www.backdropoutlet.com
Chimera www.chimeralighting.com
ExpoImaging www.expoimaging.com
FIMO www.fimo.com
Goof Off www.gooffstainremover.com
HandiTAK www.supergluecorp.com
Hensel www.henselusa.com
Lastolite www.lastolite.com
Lexar www.lexar.com
Lumiquest www.lumiquest.com
MAC Group www.macgroupus.com
Manfrotto www.manfrotto.us
Nikon www.nikonusa.com
Phase One Capture One www.phaseone.com
PhotoPlus Expo www.photoplusexpo.com
PocketWizard www.pocketwizard.com
Rogue www.expoimaging.com
Rosco Cinefoil www.rosco.com
Sekonic www.sekonic.com
Shurtape www.shurtape.com
Sunbounce www.sunbounce.com
Trans-Lum www.savagepaper.com
Velcro www.velcro.com
Westcott www.fjwestcott.com

Index

A

Accent light, role of, [54](#)

Adobe, [18](#), [75](#), [83](#), [97](#), [103](#), [107](#), [115](#), [131](#)

Lightroom, [18](#)

Photoshop, [75](#), [83](#), [97](#), [103](#), [107](#), [115](#), [131](#)

Advantage Gripware, [48](#), [119](#)

Amber gels, [122](#), [126](#)

Ambient light, [37](#), [80](#), [81](#), [89–91](#), [132–33](#)

Angle of light to subject, [26](#), [55](#), [56](#), [58–61](#), [67–69](#), [70](#), [78](#), [85](#), [86](#), [90](#), [91](#),
[92–95](#), [97](#), [104](#), [105](#), [120](#), [129–30](#), [133](#), [135–37](#), [139](#), [147](#)

0 degrees (flat light), [26](#), [55](#), [58](#), [67](#), [90](#), [97](#), [104](#)

45 degrees, [58](#), [90](#)

90 degrees, [58](#), [68–69](#), [105–6](#)

backlight, [58–59](#), [68–69](#), [86](#), [91](#), [92–95](#), [120](#), [129–30](#), [135](#), [137](#), [147](#)

determining correct, [59–61](#), [78](#), [104](#), [105](#)

top light, [59](#), [70](#), [133](#), [139](#), [147](#)

Aperture, [37](#), [38](#), [54](#), [70](#)

Art directors, working with, [13](#), [16](#), [71](#), [118–20](#), [128–31](#), [139](#)

Artistic photography, [22–24](#)

Artist's tape, [52–53](#)

Avenger C-stands, [94](#)

B

Background, gradient, [80](#)

Background light, role of, [54](#)

Background, metering, [35](#)
Background, white, [104–6](#)
Backlighting, [58–59](#), [68–69](#), [86](#), [91](#), [92–95](#), [120](#), [129–30](#), [135](#), [137](#), [147](#)
Bare bulbs, [45](#)
Barn doors, [46](#), [105](#), [109](#), [112](#), [124](#), [144](#)
Black cards, [83–84](#), [85–86](#), [88](#), [99](#), [140](#), [145](#)
Black-line effect, [82–86](#)
Black subjects, photographing, [79–81](#), [96–99](#), [146–49](#)
Blocking the light, [46–47](#)
Boom arms, [50](#), [70](#), [80](#), [94](#)
Bouncing the light, [45–46](#); see also Reflectors and Mirrors
Buying decisions, role of images in, [14–16](#), [104](#)

C

Capture One Pro, [18](#), [71](#), [94](#), [99](#), [119](#)
Chimera softboxes, [94](#), [137](#)
Chinn, Casey, [107](#)
Cinefoil, [148](#)
Clamps, [50–51](#), [123](#), [145](#)
Clothespins, [52–53](#)
Cloths, lint-free, [52](#), [82](#)
Color balance lenses, [28–29](#)
Color-compensating filters, [29–30](#)
Color meters, [28](#)
Color temperature, [27–30](#)
Color wheel, [30](#)
Commercial photography, [13–16](#), [22–24](#), [71](#), [118–20](#), [128–31](#), [132–33](#),
[138–41](#)
Complementary colors, [30](#)
Composition, [58](#)
Compressed air, [52](#)
Compression, lens, [127](#)

Continuous light sources, [29–30](#), [42–44](#), [80](#), [132–33](#)
Cookies, [126–27](#), [143](#)
Corrado, Mike, [116](#)
Creativity, [13](#)
C-stands, [49](#), [50](#), [80](#), [81](#), [94](#), [101](#), [145](#)
Cutters, [48–50](#), [105](#), [119–20](#); see also Dots and Fingers

D

Depth of field, [37](#), [38](#), [54](#), [70](#)
Diffused reflections, [65–66](#)
Digital screens, photographing, [79–81](#), [132–33](#)
Direct reflections, [66–67](#), [78](#), [86](#), [97](#), [122](#), [137](#)
Distance of light to subject, [30–33](#), [55](#), [83](#), [88](#), [124–26](#), [137](#)
Diversifying, [12](#)
Dots, [48–50](#), [101](#), [103](#), [112](#), [119](#), [145](#)
Dragging the shutter, [81](#), [89–91](#), [132–33](#)
Dust, controlling, [52–53](#), [82](#), [93](#), [146](#)

E

Edge transfer, [30–33](#), [55](#), [56](#), [83](#)
Electrical tape, [52–53](#)
Electronics, photographing, [79–81](#), [132–33](#), [146–49](#)
Embossed subjects, photographing, [75–78](#), [89–91](#)
Engraved subjects, photographing, [92–95](#), [120](#), [134–37](#)
Exposure vs. lighting, [26](#)

F

Fabric, photographing, [56](#), [104–6](#), [120](#)
Feathering the light, [80](#), [84](#), [90–91](#), [101](#), [102](#), [110](#), [123](#)
Fill cards, see Reflectors
Fill light, role of, [54](#)
Filters, see Color-compensating filters or Warming gels

FIMO, [52–53](#)

Fingerprints, avoiding, [52–53](#), [93](#)

Fingers, [48–50](#), [75](#), [90](#), [94](#), [95](#), [102](#), [105](#), [112](#), [130–31](#), [137](#), [143](#)

Flags, [46–47](#), [80](#), [98](#), [115](#), [133](#), [143](#)

Flame, photographing, [89–91](#)

Flare, preventing, [80](#), [88](#), [115](#), [133](#)

Flash, hot-shoe, see Hot-shoe flash

Flash, metering, [37](#)

Flash, studio, see Studio strobes

Flat lighting, [26](#), [55](#), [58](#), [67](#), [97](#), [104](#), [111](#)

Focal length, [127](#)

Food, photographing, [19](#), [29](#), [118–20](#), [124–27](#), [128–31](#), [134–37](#)

G

Gaffer's tape, [52–53](#)

Gels, [24](#), [110](#), [114–15](#), [122](#), [133](#)

Glass block, [143](#)

Glass cleaner, [52](#)

Glass, photographing, [35](#), [82–88](#), [96–99](#), [114–15](#), [128–31](#), [134–37](#), [144](#)

Gloves, lint-free, [52–53](#), [93](#)

Gobos, [46](#)

Goof Off, [52](#)

Gradient reflections, [109–10](#)

Gray balance, [27–30](#)

Gray cards, [28](#)

Grids, [45](#), [46](#), [80](#), [81](#)

H

HandiTAK, [52–53](#)

Hard light, [30–33](#), [45](#), [56](#), [95](#), [105](#), [112](#), [129–30](#)

Hensel, [39–44](#), [46](#), [122–23](#), [139](#), [143](#)

 C Lights, [43–44](#)

EH Pro Mini 1220P, [39](#)
Expert Pro 1000 Plus, [40](#)
grids, [46](#)
Pro Mini 1200 AS, [40–42](#)
snoots, [122–23](#), [143](#)
Histograms, [94](#)
Hot lights, [29–30](#), [42–44](#)
Hot-shoe flash, [38](#), [96–99](#), [114–15](#)

I

Incident light, metering, [33](#), [35–37](#)
Intensity of the light, [33](#), [38](#), [54](#), [70](#), [147](#)
Intersections, [121](#)

J

Jewelry, photographing, [121–23](#)
Jones, Don, [76–78](#), [132–33](#)

L

Lastolite seamless light tent, [64–65](#), [111](#)
Layout, working to pre-existing, [118–20](#), [128–31](#)
LCD, camera's, [37](#), [71](#), [116](#)
Lens flare, [80](#), [88](#), [115](#), [133](#)
Lexar, [146–49](#)
Light functions, [54](#)
Lights, approach to placing, [117](#), [122](#), [135](#)
Light tents, [64–65](#), [111–13](#), [139](#)
Lillian Vernon, Inc., [134](#)
Logos, [22–24](#), [72–75](#), [89–91](#), [105–6](#)
LumiQuest, [115](#)

M

Macbeth ColorChecker, [28](#)

MAC Group, [37](#), [50](#)
Main light, role of, [54](#)
Makeup brushes, [146](#)
Manfrotto, [18](#), [51](#)
 grip arm and head, [51](#)
 tripod, [18](#)
Masking tape, [52–53](#)
Metallic subjects, photographing, [57–58](#), [75–78](#), [89–91](#), [92–95](#), [104–6](#), [107–10](#), [111–13](#), [118–20](#), [121–23](#), [125](#), [126](#), [128–31](#), [134–37](#), [138–41](#), [142–45](#), [146–49](#)
Metering light, [33–37](#)
Mirrored surfaces, photographing, [59–61](#), [92–95](#), [107–10](#), [111–13](#), [118–20](#), [121–23](#), [134–37](#), [138–41](#)
Mirrors, [45](#), [46](#), [86](#), [90](#), [91](#), [93](#), [94–95](#), [99](#), [106](#), [110](#), [120](#), [125](#), [126](#), [131](#), [136](#), [137](#), [139](#), [140](#), [144](#), [148–49](#)
 round vs. square, [93](#)
Mixed lighting, [28–30](#)
Modeling lights, [38–39](#), [81](#), [90](#)
Multiple products, photographing, [65](#), [118–49](#)

N

Nets, see Cutters

Nikkor, [18](#), [116](#)

Nikon, [18](#), [115](#), [116](#)

 D3X camera, [116](#)

 D700 camera, [18](#)

 SB800 Speedlight, [115](#)

 SB900 Speedlight, [116](#)

Nuts, [51](#)

Nylon, rip-stop, [99](#), [112](#), [130](#), [139](#)

P

Paper Direct, [77](#)
Paper products, photographing, [72–78](#)
 embossing, [75–78](#)
 foil accents, [75–78](#)
 spot gloss, [72–75](#)
Parabolic reflectors, [26](#), [32–33](#), [45](#), [56](#), [63](#), [80](#), [81](#), [105](#), [109](#), [124](#), [133](#)
People vs. products, [19–20](#)
People with products, [20–21](#), [150–51](#)
Photofloods, [42–44](#)
PhotoPlus Expo, [151](#)
Pipe reducers, [51](#)
Pipe stubs, [50–51](#)
Plexiglas, [81](#), [83](#), [96–99](#), [114–15](#), [122–23](#)
PocketWizards, [37](#)
Polarized reflections, [67](#)
Printable range, see [Reproduction range](#)
Props, adding, [85–86](#), [119](#), [128–31](#), [134](#), [138–41](#), [146–49](#), [150–51](#)
PVC piping, [99](#), [139](#)

R

RAW format, [18](#)
Reflectances, see [Surface efficiencies](#)
Reflected light, metering, [33–35](#)
Reflective surfaces, photographing, [57](#), [79–81](#), [82–88](#), [96–99](#), [114–15](#), [118–20](#); see also [Mirrored surfaces, photographing](#)
Reflectors, [44–46](#), [47](#), [64](#), [77](#), [78](#), [80](#), [84](#), [88](#), [110](#), [114–15](#)
 gold, [45](#)
 silver, [45](#), [110](#), [126](#)
 white, [44](#), [64](#), [77](#), [78](#), [80](#), [81](#), [84](#), [88](#), [93](#), [94](#), [97](#), [99](#), [102](#), [103](#), [114–15](#), [116](#),
 [120](#), [122–23](#), [133](#), [136](#), [137](#), [139](#), [143](#), [143](#), [149](#)
Reproduction range, [71](#), [83](#), [94](#), [100–101](#), [145](#)
Retouching, [64](#)

Rogue, [115](#)

S

Sandbags, [50](#), [70](#)

Sawhorses, [70](#)

Screens, digital, photographing [79–81](#), [132–33](#)

Scrims, [26](#), [44](#), [47](#), [64](#), [80](#), [91](#), [99](#), [129](#), [139](#), [140](#), [148](#)

Sekonic, [28](#), [35–37](#)

 C-500, [28](#)

 L-758DR, [35–37](#)

Separation of subject, [67–69](#), [78](#), [81](#), [91](#), [92–93](#), [95](#), [99](#), [101](#), [122](#), [133](#), [136](#),
 [139](#), [140](#), [146–49](#)

Setup, basic, [70](#)

Shiny surfaces, see Reflective surfaces, photographing

Shurtape, [52–53](#), [93](#)

Shutter speed, [80](#), [81](#), [89–91](#), [132–33](#)

Silver cards, [110](#), [126](#)

Simulated sunlight, [124–27](#)

Size of the light, [30–33](#), [54](#)

Snoots, [45](#), [75](#), [77](#), [78](#), [88](#), [110](#), [120](#), [122–23](#), [129–30](#), [135](#), [136](#), [143](#), [148](#)

Softboxes, [26](#), [32–33](#), [38](#), [44–45](#), [54](#), [55](#), [56](#), [60](#), [64](#), [70](#), [72](#), [77](#), [80](#), [84](#), [90–](#)
 [91](#), [92–95](#), [101](#), [103](#), [105](#), [109](#), [112](#), [119](#), [122](#), [129](#), [133](#), [136](#), [137](#),
 [143](#)

Soft light, [30–33](#), [44–45](#), [55](#), [72](#), [101](#), [119](#), [120](#), [143](#), [145](#)

Specular reflections, see Direct reflections

Spot metering, [82–83](#)

Static mounts, [80](#)

Stevens, Scott, [40](#), [44](#), [70](#), [108](#)

Sticky dots, [52–53](#)

Strobe Wizard Plus, [40](#)

Studio strobes, [38–42](#)

 AC-power, [38](#)

- modeling lights, [38–39](#)
- monolights, [39–40](#)
- power-pack systems, [40–42](#)
- Stylists, working with, [13](#), [16](#), [71](#)
- Sunbounce, [47](#)
- Surface efficiencies, [62–67](#)
 - combining multiple, [65](#)
 - diffused reflections, [65–66](#)
 - direct reflections, [66–67](#)
 - lighting based on, [62–65](#)
 - no reflections, [67](#)
 - polarized reflections, [67](#)
- Swivel umbrella adapter, [50–51](#)

T

- Tangents, avoiding, [69](#), [121](#)
- Tethered shooting, [71](#), [99](#), [116](#), [129](#)
- Toolkit, [50–53](#)
- Top lighting, [59](#), [70](#), [133](#), [139](#), [147](#)
- Trans-Lum, [130](#)
- Transparent subjects, see Glass, photographing
- Tripods, [18](#), [71](#), [80](#)
- Tungsten light, [29–30](#)

U

- Umbrellas, [45](#)

V

- Velcro, [52–53](#)
- Velum, [64](#), [119](#), [130](#)

W

- Warming gels, [24](#), [124–27](#), [133](#)

Washers, [51](#)

Westcott, [43](#), [48–49](#), [90](#)

dots, [48–49](#)

fingers, [48–49](#), [90](#)

Spider Lights, [43](#)

White balance, [27–30](#)

White cards, [44](#), [64](#), [77](#), [78](#), [80](#), [81](#), [84](#), [88](#), [93](#), [94](#), [97](#), [99](#), [102](#), [103](#), [114–15](#), [116](#), [120](#), [122–23](#), [133](#), [136](#), [137](#), [139](#), [143](#), [143](#), [149](#)

White-line effect, [87–88](#), [114–15](#)

White subjects, photographing, [100–103](#)

Wood blocks, [51](#)



MASTER THE LIGHTING SKILLS NEEDED TO DESIGN MORE EFFECTIVE IMAGES OF ANY PRODUCT

Allison Earnest walks you through the process of photographing products for commercial applications, demonstrating how to light even the trickiest of shapes and surfaces for accurate, appealing images. Step-by-step images and ample setup shots show how theory translates into practice, making it easy to master each technique.

LEARN HOW TO:

- Outfit your studio with the necessary gear for product photography
- Control the quality, color, and intensity of the light
- Set the main light, fill light, background light, and accent lights
- Determine the best angle for each light
- Use a light tent most effectively
- Light your subject based on its surface qualities
- Create separation between the subject and the background
- Enhance the texture of engraving, embossing, and other surface finishes
- Light subjects on a white or black background
- Design effective images of transparent or reflective products
- Simulate the look of sunlight in the studio
- Light multiple products and props in one scene

Amherst Media®
PUBLISHER OF PHOTOGRAPHY BOOKS

PO Box 586, Buffalo, NY 14226

www.AmherstMedia.com

ISBN-13: 978-1608955442

5 3995



#1978

9 781608 955442